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<p>This report presents a theoretical tool and approach for understanding human deception and counterdeception in terms of cognitive processes and related principles of deception. A Cognitive Deception Model (CDM) is presented which is composed of 8 sections: Index, Structure, Characteristics, Principles, Examples, Plots, Tactical Objectives, and Tactics. The cognitive model structure and numbering system provide organization for the principles. The Cognitive Model on which the CDM is based is composed of components such as a central processor, attention mechanisms, memories, sensors, and affectors. A working Cognitive Simulation, included on a diskette, illustrates a computer modeling approach to studying human deception.</p>				
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A Cognitive Model For Exposition of Human Deception and Counterdeception

D. R. Lambert

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SUMMARY

OBJECTIVE

Present a theoretical tool and approach for understanding human deception and counterdeception. Characterize deception in terms of cognitive processes and related principles of deception.

RESULTS

Created a Cognitive Deception Model (CDM) made up of the following eight sections: Index, Structure, Characteristics, Principles, Examples, Plots, Tactical Objectives, and Tactics.

Produced an extensive listing of deception principles in CDM Section 4, estimated to be 60 percent complete.

Provided organization for the principles by use of the Cognitive Model structure and numbering system. The Cognitive Model is composed of a central processor, attention mechanisms, memories, sensors, and effectors.

Developed an elementary Cognitive Simulation game which illustrates a computer modeling approach to studying the deception of cognitive processes. The game (EVADE) is included on the enclosed IBM-PC diskette.

RECOMMENDATIONS

Utilize the Cognitive Deception Model (CDM) as a tool for understanding deception and counterdeception, for developing related tactics, and for stimulating research in cognitive processes. Further research and development is warranted.

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CDM Section 1. Deception Model INDEX (sample).
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APPENDICES

- A. EVADE Sample Run (printed and on microfiche).
- B. EVADE Program Flow Chart (on microfiche).
- C. EVADE Program Listing (on microfiche and diskette).
- D. EVADE Executable File (on diskette; runs on IBM-PC).
- Microfiche is inside back cover.
- Computer diskette is in pocket of front cover.

1.0. INTRODUCTION

1.1. PURPOSE.

A primary objective of this report is to develop a coherent theoretical basis for understanding human deception, and to provide a comprehensive and understandable framework for organizing deception principles and examples. Scan the deception examples (Tab: "EXAMPLES") and use the numbering system to reference the corresponding deception principles (Tab: "PRINCIPLES") and cognitive structure (Tab: "STRUCTURE").

1.2. BACKGROUND.

There has been little research on the theory of human deception, particularly from a cognitive-science viewpoint. Notable contributions to human deception include those made in references 1-5. Less formal writings of interest include those by magicians (e.g., references 6 and 7). There is also work in other areas, such as theory of errors (reference 8) and natural language processing which can be related to the study of deception.

1.3. SCOPE AND APPROACH.

This report describes an approach for understanding human deception in terms of cognitive processes and related principles of deception. The approach is to develop a Cognitive Deception Model (CDM) as follows:

- (1) Develop a structure for a unified model of human cognition, the Cognitive Model, using theoretical and intuitive concepts.
- (2) Develop principles of deception from collected empirical and anecdotal examples.
- (3) Develop the CDM by formulating a numbering system (taxonomy) and relating the principles and examples to the cognitive structure.
- (4) Develop a working computer model of a cognitive system, based on the Cognitive Model, and use it to demonstrate a simulation approach to studying principles and mechanisms of deception and counterdeception.

The intent of the CDM is to integrate various human information-processing concepts and tailor them specifically to aid understanding of human deception. The essence of the work is the list of deception principles. When, for a given case of deception, the applicable principles are identified and related to the cognitive model, the impact of the deception may be understood in terms of its effect on the cognitive system. Alternatively, when particular cognitive system components and processes are of concern, the model indicates which specific deception principles could be used to subvert them.

As a functional taxonomy of deception principles, the CDM is not dependent on the validity of any particular cognitive model. However, its integration into a specific model, such as the "Cognitive Model" formulated by this project, can enhance its value for understanding the dynamic aspects of deception. A long-term goal of the cognitive approach is to produce a general, dynamic representation of human cognition which will have predictive validity in new situations. Two other current models (references 9, 10) could also serve as excellent bases for further research in deception.

The Cognitive Simulation demonstrates partial implementation of the Cognitive Model structure of the CDM. It demonstrates that such working models can help study and understand human deception and counterdeception. It provides a rudimentary game environment in which a player can observe the cognitive processes of his simulated human opponent. The player can plan tactics to deceive this opponent using innovation and the general deception principles of the CDM, and then study how they affect his opponent's cognitive processes. A programmer can practice counterdeception by enhancing the simulated opponent to counter the player's new deceptive tactics.

2.0. OVERVIEW OF THE COGNITIVE MODEL

2.1. INTRODUCTION.

Much of the work being done by psychologists and cognitive scientists has focused on specific functions of the human mind. A number of models based on the various aspects of cognition, such as memory, knowledge, attention, problem solving, sensory processes, and decision processes have been developed. Despite the extensive work being done on specific aspects of human cognition, development of a broad, unified model has been undertaken only recently. Current work in this area by Anderson (reference 9) and Newell (reference 10) has future application to research in human deception. Relevant work is also being done on models of decision making in naval command and control (references 11-13).

The Cognitive Model described here integrates numerous concepts from literature, and from the writer's intuition, emphasizing comprehensiveness and ease of understanding. Thus, it is the writer's own particular approach to integrating various aspects of cognition for the purpose of understanding human deception. This model is just the initial basis for motivating further research. Any of the numerous aspects of the model could be expanded to support various objectives in a variety of disciplines, the understanding of deception of cognitive processes being one.

The creation and validation of a comprehensive cognitive model is a long term goal of cognitive science. Meanwhile, partially developed models such as the Cognitive Model can still be substantially effective in specific applications by, for example, serving as mental models of cognition or as taxonomies.

2.2. THE COGNITIVE MODEL.

Figures 1 and 2 show the main components of the Cognitive Model, such as the EXECUTIVE and MANAGER, and the fundamental processes, such as SENSE and FEATURE PERCEIVE, that it performs on information from the environment.

2.3. CATEGORIES OF INFORMATION (I) AND KNOWLEDGE (K).

The cognitive system processes information (I) and knowledge (K). When I or K originates in the external WORLD, the system first transforms it into internal representations, or images, representing either STATES or PROCESSES. As time passes, PROCESSES change STATES in the external world, as well as those internal to the cognitive system.

Figure 3 shows three fundamental types of I or K (K-TYPES) as follows: (1) a "whole" (i.e., a "gestalt", form, or statement of existence), (2) its internal structure (elementary "parts" or "primitives"), and (3) its external structure (its "relationships" to "others", including associative and causal relationships). Both STATE K and PROCESS K may be represented by each of the three fundamental K-TYPES.

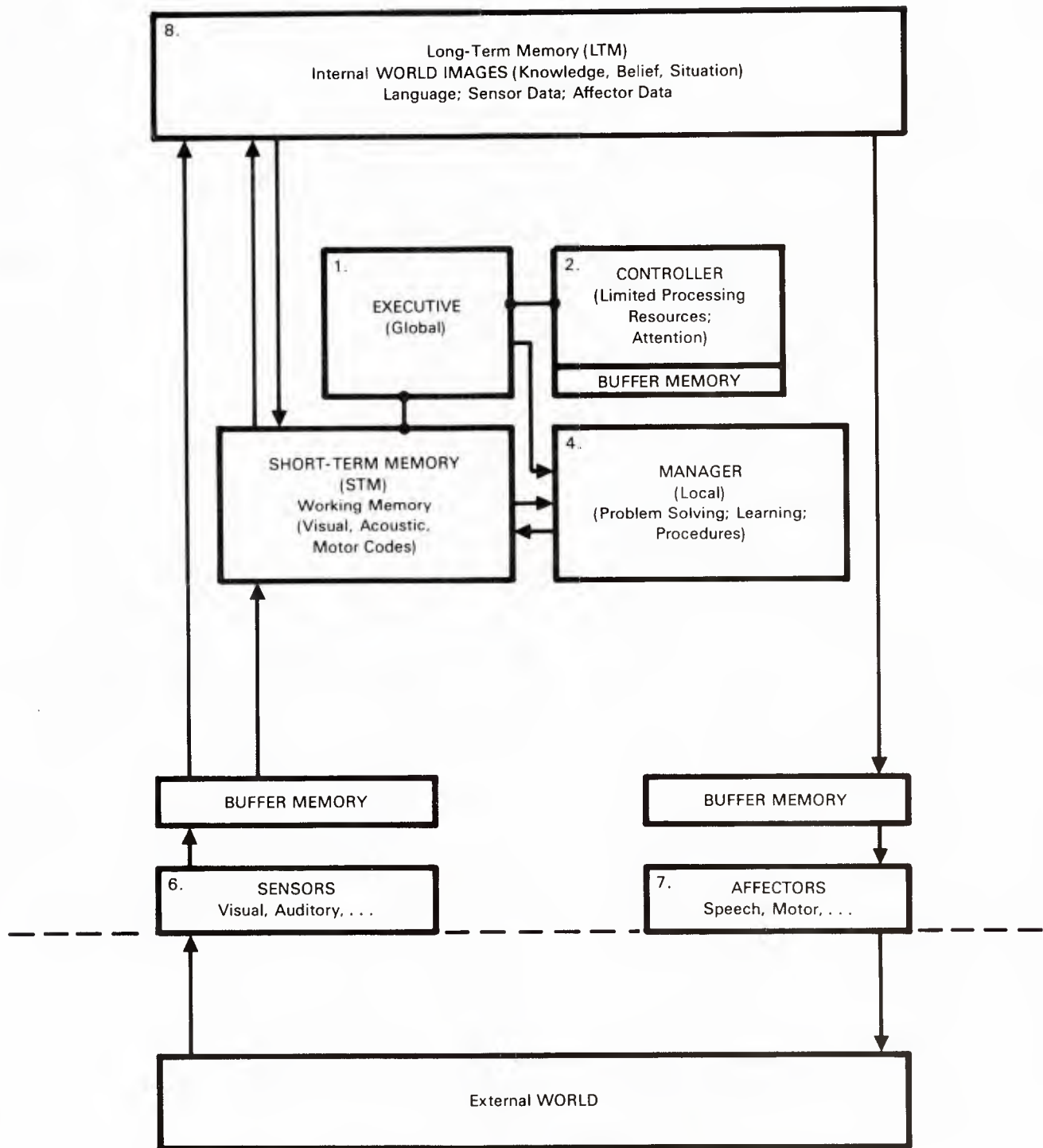


Figure 1. System components of the Cognitive Model.

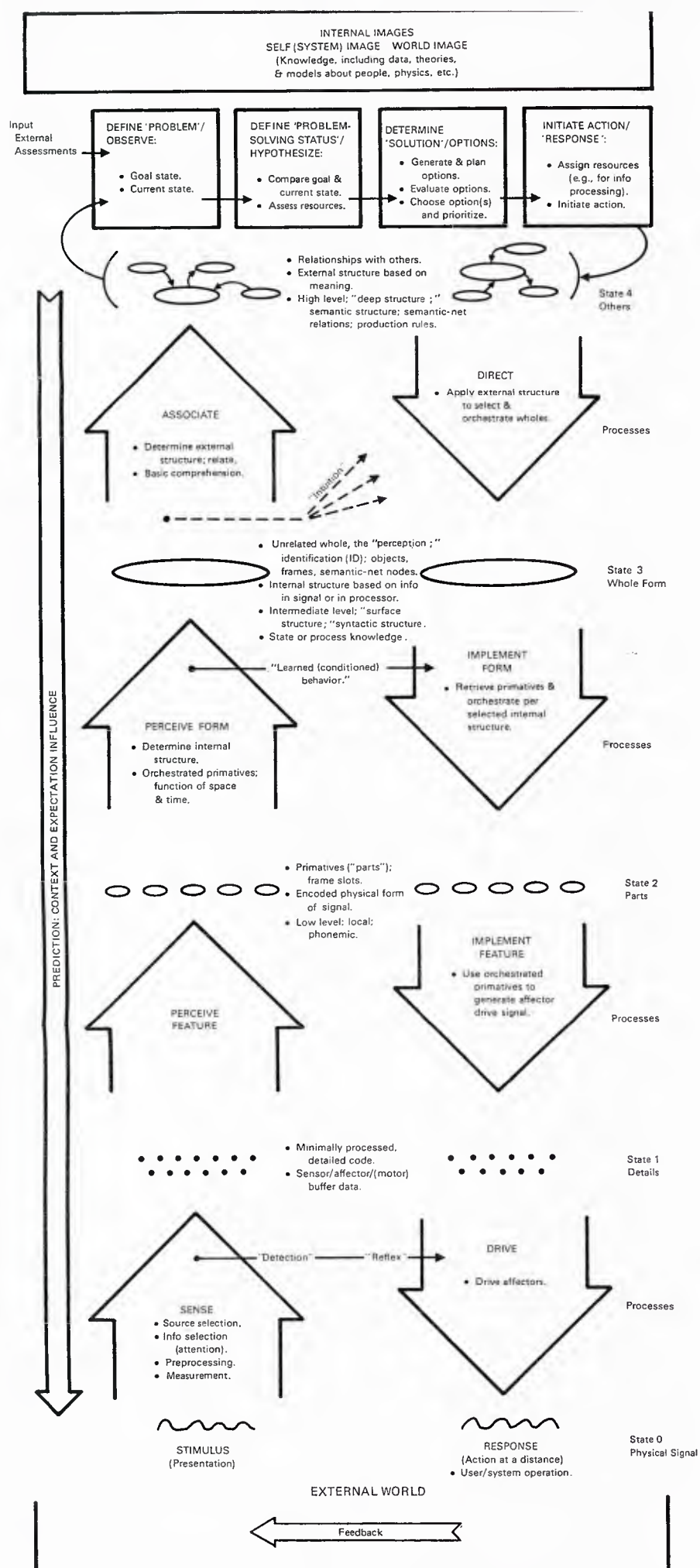


Figure 2. System processes of the Cognitive Model.

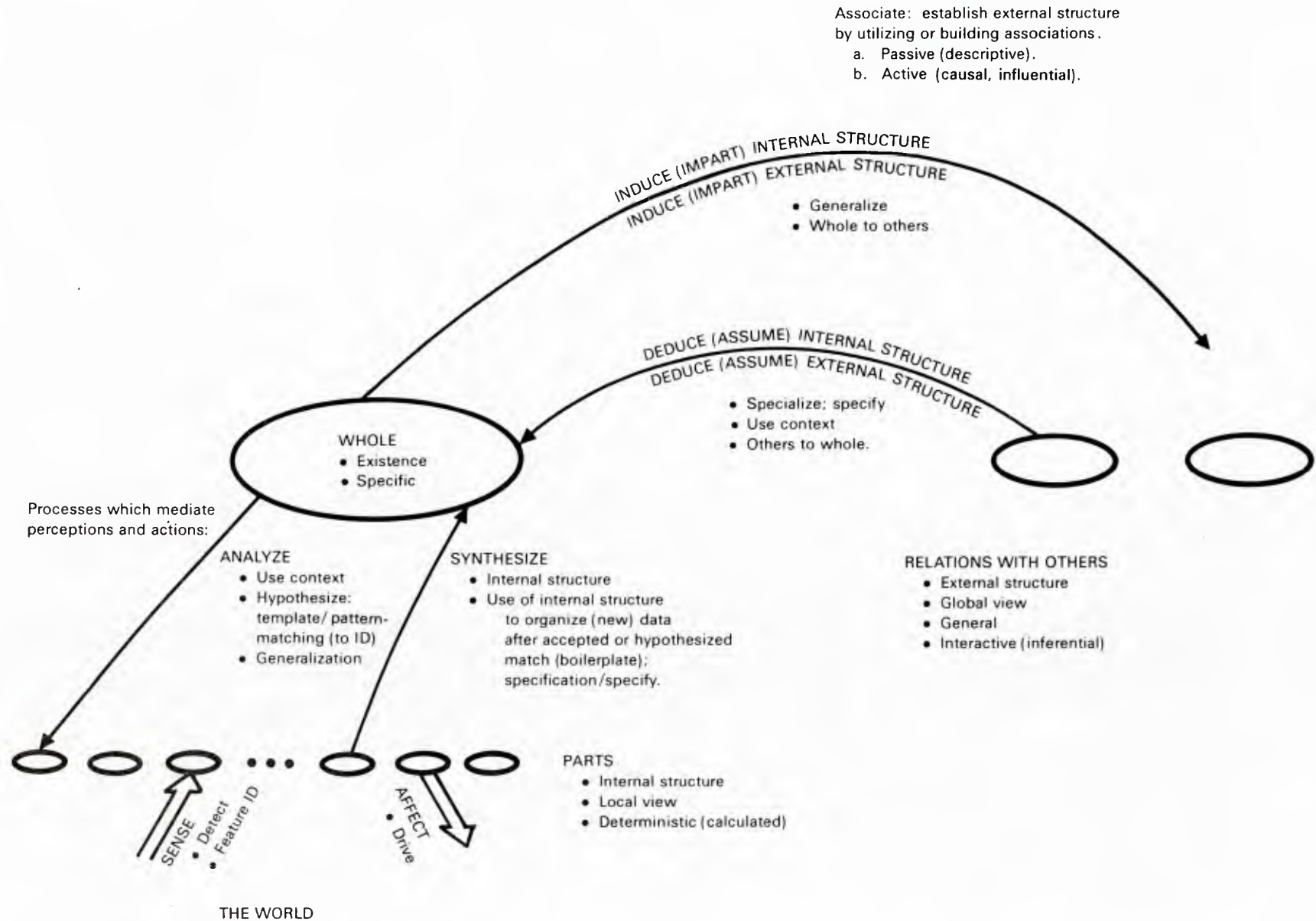


Figure 3. Structures for representing information and knowledge, and processes which relate them.

The organizational level (figure 4) of I or K is the extent to which it has been transformed from a modality-dependent form suitable for sensing or transmitting (low level) to a modality-independent form suitable for representing meaning (high level). For example, the level of spoken language is the extent to which the speech has been transformed from the acoustic waveform into representations at the phonemic, syntactic, and semantic levels.

<u>LEVEL</u>	<u>REPRESENTATION</u>
EXTERNAL:	The physical signal.
LOW LEVEL:	Based on physical form of signal.
MID LEVEL:	Based on structural information within the signal.
HIGH LEVEL:	Based on meaning and significance.

Figure 4. Levels of organization of information or knowledge.

2.4. PROCESSES OPERATING ON KNOWLEDGE.

2.4.1. Goals and Processes.

In general, the cognitive system's objective is to perform processes that change the current internal or external state to a desired goal or subgoal state. Goals are achieved by using processes, and orchestrated groups of processes called procedures. When on familiar ground, the system applies existing knowledge (K-using mode). When on unfamiliar ground, it must build new knowledge structures, such as templates, features, semantic networks, and procedures (K-building mode). There are two fundamentally different types of strategies available to the cognitive system for processing unfamiliar information: those which interpret it by using existing knowledge structures (K-using strategy), and those which use the new information to build new knowledge structures (e.g., primitives) from scratch (K-building strategy).

2.4.2. Processing Resources, Attention, and Automatic Processes.

Cognitive processes require system information channels and processing resources, the supply of which is limited. Attention processes distribute the available processing resources. The processing, at any given moment, may be limited either by the processing resources available or by the data available. The cognitive system increases its effectiveness by using automatic processes, but these can be easily tripped up when attention is relaxed. Thus, in deception, orchestration of events in time can play a critical role.

2.5. COGNITIVE MODEL COMPONENTS.

The components of the Cognitive Model and the types of processes they perform are listed below.

1. EXECUTIVE (EXEC): High-Level Awareness and Control Processes.
2. CONTROLLER: Processing Resources and Attention Control.
3. MANAGER: Problem-Solving, Thinking, and Learning Procedures.
4. SENSORS and AFFECTORS: External Input and Output Processes (Transformations among modal external signal and amodal internal representation.)
5. LTM: Internal Input, Storage, and Output Processes.

2.6. COGNITIVE PROCESSES.

2.6.1. EXECUTIVE: High-Level Awareness and Control Processes.

The EXEC directs the employment of other processes and makes processing resources available to the CONTROLLER for assignment. A fundamental (cyclical) EXEC procedure (reference 11) is:

1. Set high-level goals. Refer to/ monitor goal state and current state.
2. HYPOTHEZIZE. Compare goal and current states. Monitor and assess status of cognitive system (e.g., available system resources, motivation, and feelings and emotions). Assess available domain resources.
3. OPTIONS. Generate and evaluate options (assign belief parameter values). Prioritize goals. Choose option.
4. ACT. Allocate processing resources and invoke chosen option.

2.6.2. CONTROLLER: Processing Resources and Attention Control.

The CONTROLLER assigns available limited processing resources to, and directs and focuses the use of, specific system processes. It is the source of selective attention and information filtering. For example, it may select specific search-pattern routines. Individual style and preference help determine its strategies.

2.6.3. MANAGER: Problem-Solving, Thinking, and Learning Procedures.

The MANAGER governs the learning and application of procedures, including problem-solving procedures. It is somewhat similar to the EXEC and may invoke many of the same or similar processes, but its focus is narrower, its actions are more local in nature, and it is more dependent on using learned procedures for invoking processes. It does "tactical" planning and scheduling, setting lower-level or shorter-range subgoals, objectives, and milestones. The MANAGER may also assign values to knowledge attributes such as validity. A fundamental MANAGER procedure is:

1. OBSERVE. Establish and refer to goal state. Refer to initial or current state.
2. HYPOTHESIZE. Compare goal and current images to determine problem-solving status. Assess available processing resources and domain resources.
3. OPTIONS. Generate, evaluate, and choose options. Determine alternative means to goals, generate hypotheses, run models, and search. Predict results of alternatives. List and prioritize alternatives.
4. ACT. Return to EXEC for resources assignment and for implementation of chosen options.

2.6.4. SENSORS and AFFECTORS: External Input and Output Processes.
(Transformations among modal external signal and amodal internal representation.)

The external input processes locate, sense, select, and perceive stimuli in the external, real world. Selecting and filtering of external information is a result of the action of attention processes as directed by the EXEC via the CONTROLLER. Input information is stored temporarily in modality specific very-short-term sensory buffers. To prevent it from being lost altogether, other processes must immediately transfer it to short- or long-term memory (STM or LTM), modifying its form or format in the process. For example, low-level (e.g., phonetic or phonemic), syntactic, and semantic processes may transform the input information among phonemic, syntactic, and semantic structures, and from one semantic structure to another.

The external input procedure invokes processes as follows:

1. SENSE (a low-level data-detection process) directs and focuses attention to sense real-world data and puts them in the sensory buffer memory.
2. PERCEIVE FEATURES (or primitives, or "parts"--a low-level process) identifies features in the sensory buffer and puts them in STM.
3. PERCEIVE FORM (or "gestalt", or "whole"--a mid-level, template matching process) processes features in STM to identify wholes and store them in STM.
4. ASSOCIATE (a high-level EXEC/MANAGER process) associates the perceived form with other information, and relates it to the current situation. It ascertains the basic significance of the relationships of wholes in STM to knowledge structures in LTM.

The external output processes orchestrate and implement actions to cause effects in the external, real world. The EXEC can monitor return data at the global STM working memory.

The external output procedure invokes processes as follows:

1. DIRECT (a high level EXEC/ MANAGER process) uses associations to organize "wholes" into orchestrated action patterns. It prioritizes and schedules actions.
2. IMPLEMENT FORM (a mid-level process) uses templates to retrieve and specify names of features ("parts") and internal structure of "wholes" and assemble them.
3. IMPLEMENT FEATURES (a low-level process) retrieves specified features from LTM.
4. DRIVE (a low-level process) activates effectors by using the code generated by IMPLEMENT FEATURES. It directs and focuses attention (invokes action pattern routines).

2.6.5. LTM: Internal Input, Storage, and Output Processes.

The LTM processes control long-term memory storage, organization, and retrieval. From the point of view of STM, internal LTM image input and output is similar to external-world input and output. (Note the terminology reversal: i.e., that STM output to LTM becomes LTM input (storage), etc.).

3.0. THE COGNITIVE DECEPTION MODEL (CDM)

3.1. NOMENCLATURE: THEY, WE, WORLD.

Let WE and THEY denote players which may employ deception. WE denotes the role of the reader, usually the deceiver, and THEY his adversary, usually the deceived target. WORLD denotes the entire physical environment and situation in which the players operate. This nomenclature was selected to retain a point of view while simultaneously avoiding inherent bias as to the identity of the players, and whether or not each engages in deception or counterdeception. Project effort has focused on developing a model of THEY. Models of WE, and WORLD are important topics for future research.

3.2. COGNITIVE DECEPTION MODEL STRUCTURE.

The Cognitive Deception Model (CDM) is based on a cognitive model. The cognitive model is composed of components such as a central processor, attention mechanisms, memories, sensors, and effectors. It serves as an organizational framework for the deception principles, grouping functionally related concepts and aiding understanding. For example, a magician can fool us by employing the deception principle of misdirection. In terms of a cognitive model, the magician can control our attention processes and allocation of processing resources, and, thereby, influence what information we process from our sensors, what we discard from our short-term memory, and what we store in our long-term memory.

The major components of THEY's cognitive system are shown in figure 1. The first digit in the numbering system identifies the major component (1. EXEC and WORKING MEMORY (STM); 2. CONTROLLER; 4. MANAGER; 6. SENSORS; 7. AFFECTORS; and 8. LTM, with its internal "images" of external real-world states and processes). Further hierarchical breakdown is specified by additional digits as required. The numbers actually listed are not continuous: Gaps will accomodate future revision.

The cognitive system performs processes on information and knowledge. For example, to process information from the WORLD and move it into STM and LTM, the system employs the processes SENSE, FEATURE PERCEIVE, FORM PERCEIVE, AND ASSOCIATE.

3.3. CDM SECTIONS.

The CDM is composed of the following sections: Index, Structure, Characteristics, Principles, Examples, Plots, Tactical Objectives, and Tactics. The cognitive structure organizes human information-processing functions, and a numbering system relates them to corresponding principles by which they may be deceived, illustrative examples, and plots. (A plot is an example involving multiple, mutually supportive principles). A purpose of the tactical objectives section is to relate events in the external WORLD to the cognitive models of THEY and WE. The tactics section is currently limited to a few historical and hypothetical naval tactics.

The index, cognitive characteristics, and tactical objectives sections are currently undeveloped beyond concept sketches.

The relationships among the STRUCTURE, PRINCIPLES, and other CDM sections can aid the retrieval and application of deception principles in a particular situation, or when simulating the deception of cognitive processes on a computer. For example, the numbering system interrelates the following three entries: (a) STRUCTURE-- 2.4.2.2.3.1. "to widen the field of view of selective attention"; (b) PRINCIPLE-- 2.4.2.2.3.1.2.a. "to divide attention among irrelevant events by startling, as with an explosion"; and (c) EXAMPLE-- 2.4.2.2.3.1.2.a. "a guard standing watch is lured ...".

3.4. CDM DEVELOPMENT.

The deception principles were developed by interpreting approximately 500 examples of deception in terms of the components and processes of the cognitive model. The examples were sampled from 160 documents representing over 40 disciplines. The areas of magic, mentalism, paranormal phenomena, and confidence games are particularly rich in examples of deception.

The deception examples were analyzed, and the effects on the cognitive system were extracted as deception principles. The principles were then categorized in terms of the components and functions of the cognitive model, with the aid of a numbering system. Examples that involved multiple, possibly mutually supportive principles, were grouped separately and called "plots". Although the principles are simply listed with the plots in the present CDM, future work should consider representing principles as part of plot structure in the form of semantic nets, scripts, frames, or other similar knowledge-representation formats being developed in artificial intelligence.

The validity of the process of deriving the principles was not formally evaluated, and the principles derived are, therefore, based to some degree on the writer's subjective judgement. Interpretation of the 500 examples of deception in cognitive terms was possible, and the principles generated from them should be general. As model development proceeded, the fraction of new examples which could not be related to principles and structure already established gradually diminished. Independent evaluation will determine whether this was due solely to the increasing completeness of the list of principles or also due to bias in the writer's concept of a deception principle.

The model development process involved many revisions and mutual bootstrapping: the deception principles contributed to development of the cognitive model, and the model enhanced understanding and organization of the principles. A major revision of the cognitive structure was required as groups of related principles became unwieldy. This revision also integrated additional cognitive concepts which had been collected. The addition of extensive detail from the cognitive psychology literature was

beyond the current scope, but may be desirable in future studies of specific phenomena.

Model development was often of a creative nature, rather than an analytical one. From the perspective of the project, the analysis and understanding of cognitive processes was assumed to have been completed by academic researchers, although this is certainly not yet the case. Testing, validation, and use of the model, except for pilot explorations, was left for future research.

4.0. THE COGNITIVE SIMULATION

4.1. COMPUTER SIMULATION IMPLEMENTS COGNITIVE MODEL.

The Cognitive Simulation implements the overall structure of the Cognitive Model. A working version of the Cognitive Model opposes a human player in a game environment. The simulation is a testbed for modeling cognitive processes to understand deception, and for studying deception to learn about cognitive processing.

EVADE, the current IBM-PC version of the simulation, is intended as a transportable demonstration computer graphic. It consists of a skeleton, or "shell", which may be filled in with the details of specific models of cognitive processes. At the present state of development, these specific models are implemented in a very elementary way. Implementation of specific, detailed models of cognitive-system components and processes described in the literature, such as attention processes, remains for future work. At some point, a larger computer implementation, perhaps based on Newell's recent work (reference 10), will have much to offer.

EVADE is described below. To run it, boot an IBM-PC using DOS 2.1, insert the enclosed computer diskette, and type EVADE<carriage-return>. Details are documented in the appendices (on microfiche inside back cover) which contain (1) screen printouts from the simulation to illustrate how it looks to a player; (2) a flow chart of the program; and (3) a listing of the Turbo Pascal computer program.

4.2. OVERVIEW OF EVADE COMPUTER PROGRAM.

EVADE is based on the familiar game of BATTLESHIP in which ships are represented by tokens on a matrix playing board. There are three entities involved: the player at the keyboard is the BLUE battle group commander; the Cognitive Simulation is ORANGE; and another computer algorithm is the game REFEREE which provides instructions and keeps score.

At the start of the game, ORANGE has entered BLUE's territory and is searching for BLUE's ships. ORANGE's game objective is to find the BLUE carrier. BLUE's objective is to keep the BLUE carrier undetected for as long as possible; i.e., to position the BLUE carrier and four other BLUE ships so as to maximize ORANGE's expenditure of time and processing resources.

The BLUE player should develop plans to deceive ORANGE based on his own innovation and the principles of the CDM. For example, the player may use deception principle 6.MSS.5.2.D., disguise one ship to look like another. Then, as ORANGE searches for the carrier, the BLUE player can observe ORANGE's cognitive processing and the effect of BLUE's deception on it.

A programmer may improve the program so the ORANGE Cognitive Simulation is "aware of" BLUE's deception options (counterdeception), and

so that the game format inspires, and can accommodate, progressively greater innovation on the part of the BLUE player.

Thus, the simulation furnishes an environment for learning about deception. It provides a research tool for developing causal relationships between various deception methods and cognitive processing.

4.3. DETAILED DESCRIPTION OF EVADE.

BLUE's ships are represented by the letters CVCV (the carrier), FF (frigate), CV (disguised FF), and DDG (guided-missile destroyer). After they have been entered on the 20 x 20 real-world matrix, ORANGE's search for the BLUE carrier can begin.

4.3.1. OVERVIEW OF ORANGE'S SEARCH PROCESS.

1. The ORANGE cognitive system searches the REAL WORLD matrix one 5x5 block at a time. When ORANGE scans a 5X5 block of the REAL WORLD, a 5X5 image is transferred perfectly to ORANGE's sensory buffer.
2. Next, features (letters) in the sensory buffer are transferred to STM. But many are lost because ORANGE's processing resources can transfer an average of only 9 of the 25 elements before the information decays and is lost from the sensory buffer.
3. ORANGE then does a focused search around each significant feature in STM. During this search, a template-matching process perceives forms containing the significant feature. It may also put additional features discovered in STM.
4. ORANGE's processing system examines the most recent (top) item in STM first. As it puts new items in STM, the oldest (bottom) items will be lost if STM is full.
5. During form perception, the features in STM that are part of a form are replaced by a single chunk (ship name) that represents the form. A rehearsal process helps keep STM current.

4.4. OVERVIEW OF ORANGE'S COGNITIVE PROCESSING.

ORANGE operates according to a modified stimulus, hypothesis, options, response paradigm (SHOR) (reference 11). The EXEC, MANAGER, and CONTROLLER allocate and assign processing resources, and determine search area location and focus parameters. They OBSERVE internal memories; HYPOTHESIZE about the current situation; generate, evaluate, and choose OPTIONS; and ACT to execute the chosen option via cognitive processes such as those listed in the sections below.

ORANGE's input processes transfer REAL-WORLD data into the very-short-term sensory-buffer memory, and, if it is "significant," into STM and LTM. High-level processes interpret the data so it is "understood". In principle, strategies for processing information can be

dependent on what ORANGE already knows, although this, currently, is only minimally implemented. ORANGE's output processes transform decisions into REAL-WORLD actions.

4.5. INPUT PROCESSES.

4.5.1. SENSE: Each real-world 5x5 block is transferred perfectly to the sensory buffer.

4.5.2. FEATURE PERCEIVE: Each element in the 25-element sensory-buffer array is then examined. Due to processing limitations, each feature perceived has only a 9/25 chance of being transferred to STM. As in other "limited capacity, single channel" models of human attention, this limitation causes the loss of much information. However, if the system can focus sufficiently narrowly to select 9 sensory-buffer elements in advance, they are transferred to STM with a probability of 1.0.

4.5.3. FORM PERCEIVE: If the system has one or more significant features (a single letter D, G, F, C, or V) in its STM slots, it then examines the real-world area around each more closely using focused sensing and template-matching processes. Each recognized form, or combination of letters, is then stored as a single "chunk" in the next available STM slot, and in LTM. For example, the sequence of features D, D, and G are "chunked" into a single slot as a DDG.

4.6. HIGH-LEVEL PROCESSES.

4.6.1. ASSOCIATE: This process determines the significance of recognized forms stored in STM by comparing them with goals (i.e., the form "CVCV").

4.6.2. DIRECT: When the CVCV is found, this process determines specifications for orchestrating required actions (currently, "DIRECT ENGAGE").

4.7. OUTPUT PROCESSES.

4.7.1. IMPLEMENT FORMS: This process retrieves from memory the features making up forms ("wholes") required for action.

4.7.2. IMPLEMENT FEATURES: This process reads codes of features from LTM into the AFFECTOR buffer.

4.7.3. DRIVE: This process activates AFFECTORS for performing real-world actions (currently, the process of writing information to the computer display).

4.8. LEARNING FROM THE SIMULATION.

The simulation provides a working environment for fostering innovation in deception and counterdeception, and for clarifying and understanding the detailed effects of deception on the cognitive system. The next paragraph gives an example.

A BLUE player, in trying to deceive ORANGE, set up a pattern in which letters making up the CVCV could also be interpreted as being part of decoy CV's. When ORANGE searched and sensed one of these letters, sometimes it perceived the CVCV successfully; but often, it perceived the decoy, forgot about checking other possibilities, and continued its search without noticing the CVCV. Further investigation indicated that this occurred whenever ORANGE, in inspecting the real-world area around the initial letter, first looked in the direction of the decoy.

In this case, the simulation provided an environment in which the player could rediscover a well-known psychological phenomenon: that initial perceptions carry great weight in shaping one's final appraisal of a situation. This example is particularly interesting from a research standpoint because the phenomenon occurred as an incidental characteristic of the cognitive-simulation design, rather than an intentional one.

5.0. RESULTS, DISCUSSION, AND CONCLUSIONS

5.1. RESULTS

The key result of this effort is the principles of deception which have been collected and organized according to the cognitive structure. These principles, along with the examples and plots of the CDM, show that deception can arise at all locations in the cognitive structure.

The scope of the project did not include a formal CDM validation study. It did include small pilot explorations which provide partial validation and suggest ways of providing more. Several planners indicated they felt the model would improve generation of ideas during deception planning. This possibility could be investigated with a controlled experiment comparing a planning team using traditional methods with another using the CDM as a mental model to help generate, organize, and innovate deceptive tactics.

5.2 TEST OF COMPREHENSIVENESS OF THE DECEPTION MODEL

The model should include all principles and cover all examples. The comprehensiveness of the model may be estimated by deriving principles from a new, representative sample of examples, and then determining the percent of those principles already listed in the model. This method was employed to measure the comprehensiveness of the current CDM during its later development, although the samples used were selected from limited domains and not necessarily representative.

Three successive groups of 70, 104, and 50 principles were reviewed, during the later phases of Deception Model development. The percentages of these principles already listed in the model were 56 percent, 72 percent, and 59 percent, respectively. Thus, given a new sample of deception examples, one would expect about 60 percent of the principles they represent to be in the current model.

5.3. GENERAL DISCUSSION.

The study of deception and counterdeception improves understanding of the human cognitive system, its limitations, and its vulnerabilities.

A theory of deception involves (at least) three aspects: a theory of ERRORS made by the cognitive system, a theory of cognitive system AWARENESS of the effects of its own processes, and a theory of CONTROL which describes how external real-world objects and events contribute to misperceptions in THEY's internal cognitive processes and awareness. Principles of deception concern each of these.

Many principles of deception are statements of human limitations and vulnerabilities which one finds surprising or unexpected, which one cannot voluntarily control, or of which one is unaware.

One product of the cognitive approach is a static taxonomy for organizing deception phenomena in a coherent way. But much deception, particularly that involving attention and misdirection, is dynamic in nature. The cognitive approach readily supports the development of computer simulations of human cognition which can represent the dynamic cognitive effects of deceptive events which are orchestrated in time and space. The taxonomy of deception principles may be viewed as performance specifications for simulations of human cognition: i.e., the simulation should be deceived in the same way the human is.

Opportunities for applying an understanding of deception and counterdeception are widespread. It may, for example, be applied to improve deception, as it is in entertainment (e.g., magic) and hypnotic pain control in which those deceived willfully consent to the deception and its effects.

5.4. COUNTERDECEPTION.

The study of deception can also help one to avoid being deceived, as in law enforcement and detective work. The taxonomy of deception principles can help one predict what to expect, to prepare for the likely outcomes, and to watch for evidence of deception. It may be used in preparing performance specifications for artificial intelligence or autonomous systems to reduce their susceptibility to deception.

Other valuable assets in countering deception include general knowledge about and trust in well established principles about the world and events, a healthy degree of skepticism, a mind open to observing the unexpected, and a practical bent to keep one from becoming paralyzed by an overwhelming number of possibilities for deception. The study of these and other factors in effective counterdeception deserves future study.

5.5. SUMMARY AND CONCLUSIONS.

This report demonstrates one approach to studying and understanding human deception and counterdeception. The approach is a multidisciplinary one, integrating concepts from cognitive psychology, linguistics, artificial intelligence, and decision theory, among others.

The Cognitive Deception Model (CDM) presented in this paper represents a broad overview of deception phenomena from a cognitive point of view. This approach, including the use of computer simulation, is a very powerful one for improving understanding of both deception phenomena and human cognition. Further development is recommended.

5.6. AREAS FOR FUTURE RESEARCH.

The study of human deception, which is in its infancy, should be founded on a complete model of human cognition. Such a model is a long-term goal of the field of cognitive science.

Areas with great potential for future research in the theory and practice of deception and counterdeception include cognitive models, their simulation, understanding deception of cognitive processes, deception planning, counterdeception, and development of deception awareness in artificial intelligence systems. Such studies can support the development of concepts for understanding deception, for taxonomies and other tools for planning and countering deception, and for autonomous systems which themselves are not easily deceived.

5.7. WRITER'S NOTE.

Some flexibility has been built into the deception model to accommodate future revisions in the structure and principles. The writer would appreciate any information about cognitive models and their use in understanding deception. Of particular interest are principles of deception (or examples illustrating them) which are not currently covered by CDM Section 4.

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8.0. GLOSSARY

CDM	Cognitive Deception Model
CV	Symbol in the game EVADE which represents a fast frigate disguised as an aircraft carrier.
CVCV	Symbol in the game EVADE which represents an aircraft carrier (CV).
DDG	Symbol in the game EVADE which represents a guided-missile destroyer (DDG).
FF	Symbol in the game EVADE which represents a fast frigate (FF).
I	Information
K	Knowledge
LTM	Long-Term Memory
SHOR	Stimulus, Hypothesis, Options, Response
STM	Short-Term Memory

CDM Section 1. Deception Model INDEX (sample)

SAMPLE INDEX (CONTROLLER)

Affectors

Output commands and routines Struc 2.1.3.1.7.1.

Attention Processes

control Prin 2.4.2.2.

direct Prin 2.4.2.2.3.2.

directed where Prin 2.4.2.2

automatic processes Struc 2.3.1.2.1. Prin 2.3.1.2.1.

Background

modify Prin 2.4.2.1.1.B.b.aa.

simulate Prin 2.4.2.1.1.B.a.aa.

boredom Prin 2.4.2.1.1.D.

brainwashing Prin 2.3.1.1.4.A.

CHANNELS Struc 2.1.3.1.

chunking Struc 1.6.4.

confusion Prin 2.4.2.2.3.1.1.b.

contradiction Prin 2.4.2.2.3.1.1.a.

CONTROLLER Struc 2. Prin 2.

data reduction Struc 1.6. Struc 1.6.4.

discomfort Struc 2.3.1.2.5.

DISTRACTION

external Struc 2.4.2.2.3.1.2.

integral Struc 2.4.2.2.3.1.1.

Divert Struc 2.4.2.2.1. Prin 2.4.2.2.1.B.

DIVIDE (attention) Struc 2.4.2.2.3.1. Prin 2.4.2.2.3.2.

external influence Struc 2.3.1.2.2.

false alarms Struc 1.1.2. Struc 2.4.2.1.1.B.b.bb

field of view Struc 2.4.2.2.3.

flustering Prin 2.4.2.2.3.1.1.c.

HOLD attention Prin 2.4.2.2.2.

Information

selection Struc 2.4.2.

interfaces Struc 2.1.3.1.

lateral thinking Prin 2.3.1.1.4.B.

LTM processes Struc 8.3.

pattern learning Struc 1.6.7.

perplexity Prin 2.4.2.2.3.1.1.d.

precondition Prin 2.4.2.1.1.B.b.

Processing Resources

allocation Struc 1.4.3.1.

assign Struc 2.3.2.

availability Struc 2.3.1.1.5.

directed where Struc 2.4.2.2.

list Struc 2.1.

overload Struc 2.4.2.1.4.

percent engaged Struc 2.4.2.1.

RELAX Prin 2.4.2.1.1.

Processing Strategy

affected by Struc 2.3.1.2.

implement Struc 2.3.3.

substitution Prin 2.4.2.2.2.

Time

processing Prin 2.3.1.1.5.A. Prin 2.3.1.1.5.B.

CDM Section 2. Cognitive Model STRUCTURE

COGNITIVE SYSTEM STRUCTURE

0. GENERAL FACTORS

- 1. EXECUTIVE (EXEC) & WORKING MEMORY (STM).
(EXEC monitors STM contents and its own STATES and PROCESSES.)

1.0. GENERAL.

- 1.1. MONITOR/ASSESS CURRENT INTERNAL COGNITIVE SYSTEM STATE
(PHYSICAL & MENTAL CONDITION; high-level goals, motivation, readiness, available resources/time, emotions/ feelings/ intuitions, confidence).

1.1.0. GENERAL.

- 1.1.1. MOTIVATION ("Will").
 - .1. Intensity of Motivation.
 - .2. Commitment, loyalty.
 - .3. Responsibility (actual & perceived).
 - .5. Motivating factors.
(Feelings/motives to do or obtain something. General high-level goals & constraints; positive or negative.)
 - .5.1. Hope for obtaining something of value.
 - .5.2. Greed or desire for.
 - .5.3. Interest in; boredom.
 - .5.4. Involvement in.
 - .5.5. Curiosity about.
 - .5.6. Pride, vanity, (e.g., due to flattery).
 - .5.7. Jealousy, envy.
 - .5.8. Revenge.
 - .5.9. Sense of obligation.
 - .5.10. Altruism (feelings of charity, sympathy).
 - .5.11. Empathy, identification, helpfulness, humanitarianism, compassion.
 - .5.12. Feelings of embarrassment, humiliation, unworthiness.
 - .5.13. Particular emotions (q.v.).
 - .6. Objectives of value ("direction" of motivation):
 - .6.1. Personal values: ethics, esthetics, simplicity, efficiency, understanding, entertainment, humor, pleasure, ego-boost.
 - .6.2. Achievement (& to inform, entertain, persuade).
 - .6.3. Control & Power: influence, security, safety, profit, reward.
 - .6.4. Social values: companionship, sympathy, acceptance, sense of belonging, participation, status, recognition, "saving face".

- 1.1.2. READINESS.
 - .1. Availability of proc resources for delegation to CONTROLLER.
 - .2. Fatigue (e.g., reduces avail proc res).
- 1.1.3. EMOTIONAL STATE/MOOD (& the processes which activate emotions).
 - .1. Intensity.
 - .2. Quality (emotion type).
 - .2.1. anxiety, fear, panic.
 - .2.2. love, compassion, pity, hate, anger.
 - .2.3. pessimism, guilt, shame, inadequacy, inferiority.
 - .2.4. happiness, enthusiasm, optimism, elation (e.g., uplifting feeling from a positive, self-fulfilling, morally righteous, or therapeutic experience), sadness, despondency, depression.
 - .2.5. humor.
 - .2.6. satisfaction, dissatisfaction, jealousy, envy.
 - .2.7. attraction, fascination, obsession, distaste, disgust.
- 1.1.4. COGNITIVE SYSTEM's SELF-CONFIDENCE; SELF-ESTEEM.

<To subdivide image of own capabilities, SPECIFY COMPONENT OF COGNITIVE SYSTEM BY NAME &/OR STRUCTURE NUMBER.>

(The COGNITIVE SYSTEM derives self-confidence from the knowledge in the self-image (see 8.8.5. SELF-IMAGE in LTM), & K attributes such as reliability & trust.)
- 1.3. HIGH-LEVEL THINKING PROCESSES (Understanding, Inference, Judgement, & Decision).

(See list of processes in 1.6. EXEC PROCESSES & procedures in 4.4. ANALYTICAL PROCEDURES.)

 - 1.3.1. Control & Autonomy.
 - 1.3.1.1. Independence of thinking processes

(See also 2.3.1.2.2. & 4.4.1.2.2.2.2.2.).
 - 1.3.1.2. Perceived amount of control.
 - 1.3.2. Belief formation & employment processes
 - 1.3.2.1. Expectation (result of prediction).
 - 1.3.2.2. Receptivity to info; belief criteria (skepticism & gullibility (involved in making 8.8. World Image & current situation image).
 - 1.3.2.3. Weighting of info.
 - 1.3.3. Simplification and Approximation.
- 1.4. HIGH-LEVEL GOAL PURSUIT ACTIVITIES.

- 1.4.1. Define Current Situation.
 - 1.4.1.1. Observe & Compare Goals & Current State.
 - 1.4.1.2. Assess resources & capabilities (requirements & availability; refer to self-image).
 - .2.1. STATE K (features, templates, associations).
 - .2.2. PROCESS K (procedures, routines, preplanned responses (actions; changed data base) for specified conditions).
 - 1.4.1.2.2.1. General effectiveness of high-level decision processes.
 - 1.4.1.2.2.1.1. Speed.
 - 1.4.1.2.2.1.2. Timing.
 - 1.4.1.2.2.1.3. Reliability.
 - 1.4.1.2.2.1.4. Criticality.
- 1.4.2. Generate Plan to Satisfy High-Level Goals (options, priorities, initiate internal action).
 - 1.4.2.1. Generate & plan high-level options:
 - 1.4.2.2. Determine assignment for delegation to manager.
 - Select system component (e.g., MANAGER) & processing strategy (e.g., "K-USING & K-BUILDING Thinking Modes").
 - (May delegate to CONTROLLER).
 - 1.4.2.3. Evaluate & prioritize high-level options.
 - (Reasonableness check.)
- 1.4.3. Initiate Internal & External Action Processes to Satisfy High-Level Goals.
 - 1.4.3.1. Allocate required processing resources for assignment by CONTROLLER.
 - 1.4.3.3. Delegate task to MANAGER, etc.
- 1.6. FUNDAMENTAL PROCESSES (& CATEGORIES thereof) (e.g., thinking processes & inference tools employed in problem solving procedures used by MANAGER; Data-reduction (chunking) to selected level of detail. Prediction, e.g., using context to produce expectations).
 - 1.6.1. Establish, construct, synthesize, or refer to a STATE DESCRIPTION, such as a situation image/picture, or a goal, initial, or current state. (See also MANAGER 4.4.1.1.2.)
 - .1. Assumptions.
 - .2. Hypotheses.
 - .3. Perceived probability of deception.

- .4. Measures of confidence in achieving goal.
 - .5. External monitoring (FEEDBACK input).
- 1.6.2. COMPARE two state images (e.g., for goal & initial/current state).
- 1.6.3. CONNECT states and processes.
- 1.6.4. ASSOCIATE/CONNECT (High-level part of data input process; see SENSORS & AFFECTORS for low- & mid-level processes): (This is a read process rather than a write process.) Organization, sorting, categorizing of (input) data (data reduction (chunking) to selected level of detail).
- .1. Types of ASSOCIATIONS:
 - .1.1. Passive (e.g., characteristics).
 - .1.2. Causal/influential.
- 1.6.5. HIGH-LEVEL PATTERN RECOGNITION & INTERPRETATION.
Recognition & interpretation of patterns, using induction, deduction, relational patterns including analogies, metaphors, logical relationships (at a high-level rather than at mid-level as in the case of 6.7.MSS.5. PERCEIVE under SENSORS).
- .1. Speed
 - .2. Accuracy (Classification, Identification)
- 1.6.6. EVALUATION, CHOICE, & PREDICTION:
(See MANAGER.)
Prediction contributes to expectations; Building & use of hypotheses; see MANAGER.
Prediction supports interpretation of info & K at all levels.
- 1.6.6.1. States & Processes Supporting "PREDICT".
- .1.1. Context (see MANAGER).
 - .1.1.1. Current spacial & temporal context (see MANAGER; STM; & EXEC 1.8.8.2.1.).
 - .1.1.2. Long term & associative context (see LTM).
 - .1.2. MANAGER processes using theories, models, etc.
- 1.6.7. DIRECT (ORCHESTRATE). (First part of external output processing. See AFFECTORS for IMPLEMENT & DRIVE).
- .1. Pattern generation USING established actions (e.g., automatic processes, procedures, routines).
 - .2. BUILDING /learning (orchestrated) action patterns.
 - .3. ACTION PROCESSES.
 - .3.1. Domain of operation:
 - .1. Temporal.
 - .2. Spacial.

- .3.2. (IDEF) parameters for Process:
 - .1. Input.
 - .2. Controls & Constraints.
 - .3. Resources (e.g. avail of sensors and affectors).
 - .4. Output.
- 1.8. WORKING MEMORY PROCESSES (e.g., 1. STM with "seven plus-or-minus two" slots; 2. Spreading activation theory with working memory as an "illuminated" or "activated" part of LTM).
 - 1.8.3. Info storage processes (to STM).
 - 1.8.5. Retention and forgetting processes (info loss, especially before LTM storage).
 - .1. Decay of info with time.
 - .2. Info interference.
 - .2.1. Information overload.
 - .3. Discard of irrelevant or obsolete information.
 - .4. Interference with retention (rehearsal) process.
 - 1.8.8. COGNITIVE SYSTEM's WORKING MEMORY (STM) IMAGES.
 - (Also see 8.8. LTM: INTERNAL IMAGES.)
 - 1.8.8.1. WORKING IMAGE: GOAL STATES
 - 1.8.8.2. WORKING IMAGE: CURRENT STATE/SITUATION
 - .1. World STATE (environment, ...).
 - .2. Current STATE/situation and PROCESSES.
 - .2.1. Current context.
 - .2.1.1. Spacial context.
 - .2.1.2. Temporal context.
 - 1.8.8.3. WORKING IMAGE: HISTORY/RECENT PAST
 - .1. Significance of past/current events.
 - 1.8.8.4. WORKING IMAGE: PREDICTED/PROJECTED FUTURE STATES
 - (e.g., outcomes for alternative options).
 - (see Payoff Matrix; Evaluate/Predict).

2. CONTROLLER & BUFFER MEMORY

2.1. List of (LIMITED) PROCESSING RESOURCES.

2.1.1. ENERGY.

2.1.2. TIME.

2.1.3. SPACE.

2.1.3.1. CHANNELS (interfaces at which CONTROLLER controls info flow).

.1. CONTROLLER-Buffer/LTM Interface.

.1.1. Info type: commands & programmed routines for CONTROLLER.

.3. EXEC-Working-Memory/LTM Interface.

.3.1. Info type: varied.

.5. SENSOR-buffer/Working-Memory Interface.

.5.1. Info type: Sensor input data.

.7. AFFECTOR-buffer/LTM Interface.

.7.1. Info type: Commands & routines for affector output.

2.2. List of PROCESSING RESOURCE "CUSTOMERS".

2.2.1. EMOTIONS.

2.2.2. PROCESSES.

Routine requirements to inspect STM and SENSOR BUFFER for new info, and to process this info (before it is lost).

See list of processes in EXEC 1.6 "Fundamental Processes".

2.3. Control info processing strategy; & distribute processing resources required for info flow and processing.

2.3.1. Select processing strategy.

.1. UTILIZE EXEC/K-USING MANAGER processes which consider:

.1.1. goals.

.1.2. priorities.

.1.3. motivation.

.1.4. alternative available processing strategies.

.1.5. availability of processing resources (see 2.1.).

.2. Affected by:

.2.1. Dependence on preprogrammed, automatic, habitual, subconscious, (inflexible) processes.

.2.2. Dependence on external guidance & influence (see also 1.3.1.1 & 4.4.1.2.2.2.2.).

.2.3. Willingness to expend resources to obtain info.

.2.4. Distribution of proc resources required by task.

.2.5. Discomfort (physical; mental).

2.3.2. Assign processing resources to customers.

2.3.3. Implement info processing strategy.

2.4.2. Directs processing resources in controlling info selection
(INFO SELECTION & SELECTIVE ATTENTION).

.1. Percent engaged

.1.1. Disengaged (relaxed; attention not attracted)

.1.2. Partially engaged

.1.3. Fully engaged

.1.4. Overloaded

.2. Where directed

.2.1. Shift center of attention; Attract; DIVERT

.2.2. HOLD (maintain)

.2.3. Field of view (focus)

.2.3.1. Widen; DIVIDE attn (DISTRACT)

.2.3.1.1. Among relevant events ("integral DISTRACTION")

.2.3.1.2. Among irrelevant events ("external DISTRACTION")

.2.3.2. Narrow

4. MANAGER

4.3. SYNTHETIC/CREATIVE/K-BUILDING PROCEDURES/THINKING MODE.

This thinking mode handles the building of the knowledge structures used by other parts of the cognitive system. It uses processes which produce each state description or process found elsewhere in the system, except those which are innate. This section is not developed, the principles being listed with other, corresponding parts of the system.

4.4. ANALYTICAL/PROBLEM-SOLVING PROCEDURES/THINKING MODE.

4.4.0. General effectiveness of problem-solving processes.

- 4.4.0.1. Speed
- 4.4.0.2. Timing
- 4.4.0.3. Reliability
- 4.4.0.4. Criticality

4.4.1. LOCAL GOAL PURSUIT & PROBLEM SOLVING PROCEDURE.

4.4.1.1. FORMULATE PROBLEM & (RE-)EXPRESS IN INTERNAL FORM:

(Note: Relating EXT WORLD to INT IMAGE is fundamental.)

4.4.1.1.1. Establish/Refer to GOAL (including actual and perceived intent, priorities).

- .1. Goals (e.g., setting)
 - .1.1. Time factors (constraints on achieving goal)
 - a. Long term
 - b. Intermediate term
 - c. Short term (see 2.3. CONTROLLER: processing strategy)
 - .1.2. Specificity
 - a. General
 - b. Specific

4.4.1.1.2. Establish/ Refer to INITIAL or CURRENT STATE (see also 8.8. LTM INTERNAL IMAGES of COGNITIVE SYSTEM's and OTHER SYSTEM's physical & mental condition) (see also EXEC 1.6.1.).

- .1. Assumptions.
- .2. Hypotheses.
- .3. Perceived probability of deception.
- .4. Measures of confidence in achieving goal.
- .5. External monitoring (FEEDBACK input).

4.4.1.2. DEFINE CURRENT PROBLEM-SOLVING STATUS & PROBLEM SPACE:

4.4.1.2.1. Define Problem-Solving Status (COMPARE images: goal state & initial/current state).

- 4.4.1.2.2. Define Problem Space.
- 4.4.1.2.2.1. Assess Resource Requirements.
- 4.4.1.2.2.1.1. External Resources.
- 4.4.1.2.2.1.2. Internal Resources.
 - .1.2.1. K, K-Types, K-Sources, Attributes (see 5.1. STRUCTURE OF WORLD-IMAGE KNOWLEDGE & BELIEF).
- 4.4.1.2.2.2. Assess Available Capabilities and Processes.
 - .2.1. See section 1.2. MENTAL CONDITION: Motivation, self-image, etc.
 - .2.2. Process IDEF parameters:
 - .2.2.1. Input.
 - .2.2.2. Controls & Constraints on processes; autonomy (see also 1.3.1.1 & 2.3.1.2.2).
 - .2.2.3. Resources (e.g. avail of sensors and affectors).
 - .2.2.4. Output.
- 4.4.1.3. SOLVE PROBLEM.
- 4.4.1.3.1. Generate & Plan Options (means to goals).
 - Relate states & processes.
 - PREDICT effects of processes & other resources on states.
 - Plan go/no-go conditions.
 - Plan preplanned responses.
- 4.4.1.3.2. Evaluate Options.
 - (E.g., by using procedure 4.4.2. Payoff Matrix Evaluation.)
 - .1. Generate, select, & employ standards and Measures of Effectiveness (MOE's).
 - .2. MONITOR and evaluate PAST effects of PROCESSES on STATES using FEEDBACK. (Compare current state with previous states; Evaluate appropriateness.)
 - .2.1. Previous goals.
 - .2.2. Previous processes.
 - .2.3. Previous choices.
 - .2.4. Progress toward goal.
 - .2.8. FEEDBACK: Performance coupling (degree; value).
 - .3. Validate CURRENT picture/ situation.
 - .4. Predict FUTURE outcomes (use context, models, etc., to generate expectation).
 - .7. Evaluate Options.
 - .7.1. With respect to absolute criteria, assumptions, and K-validity.
 - .7.2. Relative evaluation (comparison) with respect to

optimal/best-fit.

.7.3. Cost/effectiveness evaluation.

4.4.1.3.3. Choose/Prioritize Options.

.1. Decision threshold or criterion.

.2. Prioritize options.

.2.1. STATE DESCRIPTIONS: Goals & Subgoals.

.2.2. PROCESSES: Means to Solutions.

4.4.2. PAYOFF-MATRIX Evaluation. Set up a table which includes the following:

.1. Conditions or events.

.1.1. Possible conditions or events.

.1.2. Probabilities of conditions or events.

.2. Possible alternative decisions/choices for a given condition or event.

.2.1. Investment (Cost, effort, manpower, material, logistics, weapons, to pursue alternative).

.3. Possible outcomes (e.g., hit, miss, FA, CR).

.3.1. Payoff value for each possible outcome (event x decision).

.3.1.1. Positive components.

.3.1.2. Negative components.

.3.2. Probability of outcome, for a given choice.

.4. Expected (overall average) payoff for each possible decision.

.4.1. Actual expected payoff values.

.4.2. Perceived expected payoff values.

.4.2.1. Hope (see EXEC 1.2.1.5.1. Motivation).

.4.2.2. Perceived risk, peril.

4.4.3. ANALYTICAL PROCEDURES, TOOLS, THEORIES, MODELS, ETC.

4.4.3.1. Mathematical tools and procedures.

4.4.3.3. Formulas; models & simulations; procedures, algorithms, & routines.

4.4.3.5. Logical & intuitive reasoning & judgement.

(NOTE: Some intuition may be considered as an EXEC function involving a less conscious or less rigorous application of analytical tools without extensive MANAGER involvement. Perhaps it employs "table look-ups" made possible by previous experience.)

.5.1. Logical reasoning and judgement.

.5.2. Intuitive judgement & estimation biases.

.5.2.1. Sampling bias.

4.4.3.7. Comparison.

4.6. EXTERNAL INPUT (SENSOR) PROCEDURES.

4.7. EXTERNAL OUTPUT (AFFECTOR) PROCEDURES.

4.8. INTERNAL (LTM) INPUT & OUTPUT PROCEDURES.

4.8.8. Available memories are LTM, STM, & sensor & affector buffers (q.v.).

6. SENSORS & BUFFERS

6.0. General

6.MSS. Sensor mode (M) and type (SS) specified as follows:

MSS. Mode & Type unspecified

1SS. Passive Mode

2SS. Active Mode

M01. Electromagnetic

M11. Visual

M02. Acoustic

M21. Auditory

M03. Chemical

M31. Taste

M32. Smell

M04. Skin

M41. Pressure

M42. Temperature

M43. Damage

M05. Acceleration & Motion

6.MSS.1. DETECT (SENSE)

.1.1. Coverage area

.1.2. Amplitude & S/N ratio & sensitivity threshold

.1.2.1. Signal level

.1.2.2. Noise level

.1.3. Sensor capacity

.1.4. Precision (resolution, discriminability).

.1.4.1. Spatial.

.1.4.2. Temporal.

6.MSS.3. PERCEIVE (SENSE) FEATURES (PRIMATIVES/CHARACTERISTICS). (Reduces (chunks) data to selected level of detail).

.3.1. Speed.

.3.2. Accuracy.

6.MSS.5. PERCEIVE THE WHOLE (GESTALT); Pattern recognition (e.g. by TEMPLATE MATCHING), classification, & identification. (Reduces (chunks) data to selected level of detail. See also high level processes 1.6.4. & 1.6.5. in EXEC).

.5.1. Speed & Response Time.

.5.2. Accuracy.

NOTE: "ASSOCIATE", the process for the next higher level, is in
EXEC.

6.MSS.7. Reference Values and Feedback.

6.MSS.8. Buffer Memory.

6.MSS.9. Other.

7. AFFECTORS & BUFFERS.

7.0. General.

7.AA. Affector type (AA) specified as follows:

- 01. Electromagnetic.
- 02. Acoustic.
- 21. Speech.
- 03. Chemical.
- 05. Kinetic (Physical) (e.g., muscle).

7.AA.1. DRIVE.

- .1.1. Coverage area.
- .1.2. Amplitude.
- .1.3. Capacity (Power).
- .1.4. Precision.
 - .4.1. Spacial.
 - .4.2. Temporal.

7.AA.3. IMPLEMENT FEATURES (USE OF PRIMATIVES/CHARACTERISTICS).

- .3.1. Speed.
- .3.2. Accuracy.

7.AA.5. IMPLEMENT THE WHOLE (GESTALT); Pattern generation USING TEMPLATES.

- .5.1. Speed & Response Time.
- .5.2. Accuracy.

NOTE: "DIRECT" (ORCHESTRATE), the process for the next higher level, is in EXEC.

7.AA.7. Reference Values and Feedback.

7.AA.8. Buffer Memory.

7.AA.9. Other.

- 8. WORLD IMAGE & LONG TERM MEMORY (LTM)
 - 8.1. STRUCTURE OF WORLD-IMAGE KNOWLEDGE & BELIEF
 - 8.1.1. TYPES of Info and Knowledge.
 - .1. STATES (STATE DESCRIPTIONS).
 - .2. PROCESSES.
 - 8.1.2. LEVEL of Info and Knowledge.
 - .1. LOW.
 - .2. MID.
 - .3. HIGH.
 - 8.1.3. ORGANIZATION of Info and Knowledge.
 - .1. Connections.
 - .1.1. Passive associations.
 - .1.2. Causal associations.
 - 8.1.4. ATTRIBUTES of info & K (K-ATTRIBUTES) (Group 1).
 - .1. PURPOSE.
 - .2. IMPORTANCE.
 - .3. APPLICABILITY.
 - 8.1.5. K-ATTRIBUTES (Group 2).
 - .1. QUANTITY.
 - .2. COMPLEXITY.
 - .3. ACCURACY.
 - .4. PRECISION.
 - .5. DEGREE OF FORMALISM (DEGREE TO WHICH EXPLICITLY SPECIFIED).
 - 8.1.6. K-ATTRIBUTES (Group 3).
 - .1. AVAILABILITY.
 - .2. BASIS (SOURCE; DERIVATION).
 - .3. PERMANENCE.
 - .4. RELIABILITY (REPEATABILITY based on statistical tests).
 - 8.1.7. K-ATTRIBUTES: VALIDITY (Correctness based on evidence).
 - .1. Validity of info being stored.
 - .2. Validity of info in knowledge base.
 - a. Parameter: Truth value: probability info is true based on evidence (0 to 1).
 - .3. Validity of info after retrieval.
 - 8.1.8. K-ATTRIBUTES: BELIEF & TRUST (Commitment to dependence on K).
 - .1. Belief in info being stored.
 - .2. COGNITIVE SYSTEM's belief about validity of info in its knowledge base.
 - a. Parameter: Belief: believe, don't know, disbelieve; believe opposite (1, 0.5, 0; -1).
 - .3. Belief in info after retrieval.

8.1.9. Relationship between info validity and belief.

- .1. Trust in reliable info or source.
- .2. Distrust of unreliable info or source.
- .3. Trust in unreliable info or source.
- .4. Distrust of reliable info or source.

8.3. LTM ORGANIZATION AND STORAGE PROCESSES.

8.3.1. Failure of Process.

8.3.2. Info Validity.

8.5. LTM RETENTION AND FORGETTING PROCESSES.

8.7. LTM SEARCH AND RETRIEVAL PROCESSES.

8.8. COGNITIVE SYSTEM'S INTERNAL IMAGES: STATE DESCRIPTION
KNOWLEDGE & VIEW OF PROCESSES.

8.8.1. COGNITIVE SYSTEM'S GENERAL K & BELIEFS ABOUT THE WORLD.
(e.g. superstition, stereotypes)

8.8.2. COGNITIVE SYSTEM'S IMAGE: PHYSICAL WORLD & PROCESSES.
(e.g., natural phenomena, math, physics, frequency
data, the existence, nature, & effects of processes)

8.8.3. COGNITIVE SYSTEM'S IMAGE: HUMAN BEHAVIOR.

8.8.4. COGNITIVE SYSTEM'S IMAGE: HISTORY, EXPERIENCE, & EVENTS.

8.8.5. COGNITIVE SYSTEM'S IMAGE: K & BELIEFS ABOUT ITSELF
("SELF-IMAGE").

<SPECIFY COMPONENT OF COGNITIVE SYSTEM BY NAME &/OR STRUCTURE
NUMBER. E.g., COGNITIVE SYSTEM'S EXEC, CONTROLLER, etc;
COGNITIVE SYSTEM'S goals, intent, priorities, means to goals,
commitment, loyalty, internal values & constraints, will &
motivation, etc.>

- .1. Physical characteristics & capabilities.
- .2. Mental characteristics & capabilities.
 - .2.1. Adequacy of knowledge base (STATES).
 - a. Relation of world image to real world.
 - .2.2. Adequacy of PROCESSES.

8.8.6. COGNITIVE SYSTEM'S IMAGE: K & BELIEFS ABOUT OTHER SYSTEM.

<SPECIFY COMPONENT OF OTHER SYSTEM BY NAME &/OR STRUCTURE NUMBER.
E.g., OTHER SYSTEM'S EXEC, CONTROLLER, etc; OTHER SYSTEM'S goals,
intent, priorities, means to goals, commitment, loyalty, internal
values & constraints, will & motivation, etc.>

- .1. Physical characteristics & capabilities.
 - .2. Mental characteristics & capabilities.
 - .2.1. Adequacy of knowledge base (STATES).
 - a. Relation of world image to real world.
 - b. OTHER SYSTEM's knowledge about COGNITIVE SYSTEM.
 - .2.2. Adequacy of PROCESSES.
- 8.8.7. COGNITIVE SYSTEM's IMAGE: K & BELIEFS ABOUT THE CURRENT SITUATION: World state, environment, context, significance of past events, processes currently operating. (See 1.8.8. EXEC Working Info).

CHARACTERISTICS

- 0. GENERAL FACTORS (affecting capabilities).
- 1. EXEC & WORKING MEMORY
 - 1. Emotions affect avail. of proc. resources & decision speed
 - 1. Directs and manages other processes
 - 1. Interacts with LTM
 - 1. Guides and utilizes MONITOR
 - 1.1.1. Includes "will", determination, loyalty, and commitment
 - 1.1.1.1. Level of motivation; laziness
 - 1.1.1.2. Commitment to goals and means
 - 1.1.2. Factors affecting readiness:
 - a. confinement
 - b. physical exercise
 - 1.1.2.2. Factors affecting fatigue:
 - a. Amount of sleep
 - b. amount of food and water
 - 1.3.1. Social structure and chain of command.
 - 1.3.1. Intellectual maturity; capacity for independent thought
 - 1.3.2. Criteria for belief
 - 1.3.2.2. Tendency to suspect deception
 - a. Experience being deceived
 - 1.4.1.2.2.1.3. Ability to detect deception
 - a. Alert status
 - 1.6. Monitors knowledge validity, belief, trust, and confidence.
 - 1.6. Evaluation of importance, relevance, and impact
 - 1.6. Comprehension, concept formation
 - a. Meaning
 - b. Problem solving
 - c. Linguistic processing
 - a. Inference
 - b. Parsing
 - c. Verbal representation
 - d. Semantics
 - 1.8. Employs STM or Working Memory
- 1.8. SHORT TERM MEMORY
 - a. Capacity limited to five "chunks"
 - aa. Decay of info within about 30 seconds
 - bb. Interference by other info
- 1.8. Perceived importance, relevance, and impact
- 1.8. STM Memorial Comparison Process
 - (e.g. Comparison of input with STM contents.)

CHARACTERISTICS

2. CONTROLLER & BUFFER MEMORY

2. CONTROLLER is a single channel processor which:

- a. has limited capacity
- b. directs info processing resources
- c. itself requires info processing resources
- d. is affected by motivation and emotion
- e. Other Processing Characteristics:

- a. speed
- b. timing and coordination

2.1.3.1. Controls info flow at interfaces; access to Controller Buffer, STM, LTM, and Sensory and Affector Buffers.

2.1.3.1.7.1. Output coding for effectors

- a. Message generation and encryption to indicators.
- b. Motor patterns; speech articulation patterns.
- c. Inclusion of unintended information (info leaks).
- d. Errors and delays.

2.3.1. Selects Processing Strategy.

- a. Encoding processes
 - aa. Level of detail (F/NF)
 - bb. Code forming/code using
 - . Probable bias for code using strategies vs lengthy code forming (learning) strategies
- b. Automatic processes vs controlled processes
 - aa. Novel vs familiar data
 - bb. Flexible vs inflexible
- c. Selection of reference information
- d. External influence

2.3.3. Implementation of processing strategy

- a. Encoding processes (decoding from indicators to message; analyze, interpret, validate, evaluate, screen evaluation)
 - aa. Chunking

2.4.2. Controls ATTENTION PROCESSES

- a. Determines allocation of limited processing resources to Controller, EXEC, STM, LTM, sensory, and affector processes.
- b. Percent engaged
- c. Where directed

CHARACTERISTICS

4. MANAGER

4.3. Controls:

- a. Info selection from external and internal sources.
(See also 6.3.2. CONTROLLER.)
- b. Info format and modality
- c. Reference information

4.4.1.1.1. Planning. Determines:

- a. goals, subgoals
- b. priorities among goals
- c. means to goals, authority, resources
- d. time schedule

4.4.1.1.2. Perceived story or scenario

4.4.3.5.2. Intuitive estimation biases:

- a. Personal, personality, mental,
& physical predispositions
- b. Innate, learned, preprogrammed by others
- c. Statistical estimation
 - aa. Poor at Bayesian statistics:
 - . Often employs unrepresentative sampling
 - . Incorrectly estimates probability of events
 - bb. Makes oddmatches due to failure to know size of
target or sampled sets
 - . Notices events but fails to notice non-events
 - cc. Subject to subjective validation of a hypothesis
(Ignore data which does not fit; Use data which does)

CHARACTERISTICS

6. SENSORS & BUFFERS

- a. Inputs: signal (S), and noise (N)

6.MSS. SENSOR MODE & TYPE:

- 111. (Visual) - Eyes
- 121. (Auditory) - Ears
- 131. (Chemical: Taste) - Tongue
- 132. (Chemical: Smell) - Nose
- M41. (Skin) - Tactile
- 142. (Skin) - Temperature
- 143. (Skin) - Damage/Pain

6.MSS.1. (DETECTION)

6.MSS.1.4. (PRECISION/DISCRIMINATION)

6.MSS.5. PATTERN ANALYSIS/RECOGNITION/CLASSIFICATION/IDENTIFICATION

- a. Method or algorithm
- b. Initial low level processing
 - a. Automatic at lowest levels
 - b. Controllable at intermediate levels
- c. level of detail
- d. For ambiguous info, fills in info from memory pattern

6.MSS.10. BUFFER STORES

6.111.10. Visual Information Store (VIS)

- a. Time decay in about 0.1 seconds.
- b. Interference

6.121.10. Precategorical Acoustic Store (PAS)

- a. Time decay in about 2 seconds
- b. Interference

CHARACTERISTICS

7. AFFECTORS & BUFFERS

- a. Output: signal, noise

7.AA. Affector Types:

7.21. (Acoustic) - Speech

7.03. (Chemical) - GSR, sweat

7.05 Muscle (Motor)

- a. Physical movement
 - a. Body Language
- b. Appearance changes
- c. Involuntary muscle movements
 - a. Regular automatic (e.g., heart rate)
 - b. Idiosyncratic (subconsciously variable)

CHARACTERISTICS

8. LONG TERM MEMORY & WORLD IMAGE

8.3. (ORGANIZATION AND STORAGE PROCESSES)

- a. Time required
- b. Reference information
- c. Input information

8.5. (RETENTION (AND FORGETTING) PROCESSES)

Allows discarding of detailed input when a match is found.

8.7. (SEARCH & RETRIEVAL PROCESSES)

- a. Time required
- b. Reference information
- c. Input information
- d. Compare input and reference information
 - aa. Finds "schema" in LTM which represents data
(matches, classifies, summarizes)

8.8. (WORLD IMAGE): perceptions & beliefs not easily altered

8.8. STRUCTURE OF MEMORY

- a. Knowledge structure
- b. Frames, schemata
- c. Nodes and links (relations; associative)
- d. Organization
- e. Activation
- f. MOPS (Memory Organizational Principles)
- g. Scripts
 - a. Episodic memory (based on events)
vs Semantic memory (based
on hierarchies)
- h. Learned patterns and procedures
- i. Routines (programs & subroutines)
vs production systems (conditions and actions)
- j. Automatic processes, rote memory, "habits"

CDM Section 4. Deception PRINCIPLES

O. GENERAL FACTORS & PRINCIPLES

- O.A. Design deception to have the desired total, integrated, effect on THEY's processes (understanding, inference, decision, judgement, monitoring, goal setting, memory, learning, etc.).

NOTE: "The effect is the thing".--Annemmann.

NOTE: The measure of the effectiveness of a deception should be based on its effect on THEY's cognitive processes, not WE's perception of it.

NOTE: WE's individual personality and approach must determine what WE presents, and how WE presents it.

- O.B. Increase difficulty for THEY to find the truth (i.e., THEY's info processes).

- a. Increase ambiguity ("A-type" deception).
- b. Decrease ambiguity, but lead away from the truth ("M-type" deception--misleading).

- aa. Manipulate or capitalize on THEY's EXPECTATIONS.

- i. Manipulate mental set via instructions, suggestion, pre-planned experiences.

NOTE: We see things as our minds think they ought to be; our minds find simple (sic) patterns automatically; and once a meaning or pattern is established, it is difficult to change ("perceptual prejudice").--Weibel.

NOTE: "We represent it so vividly to ourselves we believe we see it."--A. Binet, 1894 regarding habitually associated acts.

NOTE: "Always endeavor to form an accurate conception of the point of view most likely to be adopted by a disinterested spectator."--Maskelyne.

- ii. Capitalize on THEY's education, prior experiences.

NOTE: Perception (e.g., based on partial info; see 4.4.1.1.2.), including the finding and interpretation of evidence, is affected by expectation, beliefs, motives, past experiences.

- O.C. Induce/capitalize on THEY's general processing capabilities and strategies (e.g., to predict susceptibility to particular types of deception).

a. Whether THEY's thinking style is "left-hemisphere (logical, analytical, ...), or "right-hemisphere" (intuitive, spacial, visual, ...).

EXEC PRINCIPLES

- 1.0.A. Capitalize on the speed and accuracy of THEY's EXEC processes (understanding, inference, decision, judgement, monitoring, goal setting, memory, learning, etc.).
- 1.0.B. Capitalize on patterns of THEY's EXEC processing, especially those revealed by his type of education and thinking habits. Provide THEY with input which leads him along his accustomed paths of thinking.
- 1.1. Use physical and mental (POW) techniques such as brute force and "brainwashing" to reduce THEY's mental capability, possibly without him realizing it (e.g., alter his self-image; lower his self-esteem). See 2.3.1.1.4.A., 8.3.B., 8.5.A, 8.8.5.

- 1.1.A. Brainwashing techniques include:
 - a. fatigue; sleep, food, water deprivation.
 - b. repetitive stimuli.
 - c. rhythmic stimuli such as photic driving at natural brain wave frequencies to produce seizures in epileptics.
 - d. forceful stimuli.
 - e. sensory deprivation; reduced stimulation.
 - f. unpredictable environment.
 - g. unpredictable attitudes of brainwashers (e.g., from conciliatory to brutal).
 - h. unpredictable punishment.
 - i. isolation.
 - j. indoctrination lectures, lies, persuasion.
 - k. threats; fear; simulate punishment of others.
 - l. disorientation.

NOTE: Make THEY susceptible to "brainwashing" by emotional deprivation or high states of emotion (e.g., anger & fear) as may be produced by excessive leniency or excessive punishment, especially when used alternately.

- 1.1.B. Techniques for producing hallucinations (e.g., confusion of reality and fantasy) include:
 - a. confine (physically; by threats; by commands).
 - b. remove from environment--(prolonged) isolation.
 - c. sensory habituation; monotonous stimuli (e.g., noises).
 - d. (prolonged) uncertainty of outcome (e.g., life raft experience).
 - e. physiological damage; deprivation.
- 1.1.C. Hypnosis can be used to induce sensor & affector hallucinations, make memory modifications, control

attention, and control EXEC processes such as decision and judgement.

1.1.D. Drugs and Chemicals.

1.1.E. Electro-stimulation of the brain to produce artificial sensations, emotions, epileptic seizures, etc.

1.1.F. Physical changes. Temperature (e.g., heat exhaustion to produce disorientation); Movement (e.g., inner ear/visual disparity; spinning to cause dizziness; ship motion to cause seasickness).

1.1.1. Manipulate or capitalize on THEY's motivation (e.g., to alienate from group or authority and win to WE's side).

A. So THEY does not want (see also 1.3.2.2.):

- a. to obtain key info.
- b. to process key info correctly.
- c. to communicate or establish a close relationship (e.g., by simulating an unappealing characteristic or condition).

B. Induce belief that the end (goal) justifies the means.

C. Offer "greener grass" (capitalize on THEY's desperation; point to unfulfilled promises; promise gain).

D. Induce/capitalize on conflicting motives.

1.1.1.1.A. Capitalize on THEY's laziness on non-delegated tasks

B. Weaken THEY's morale.

C. Induce/capitalize on complacency/lack of motivation.

D. Induce/capitalize on THEY's appreciation for or interest in events (entertainment, art, grace, beauty, etc.) to delay action.

1.1.1.2.A. Obtain premature commitment (e.g., by pressure tactics).

B. Strengthen commitment to a goal by inducing belief that it was THEY's idea.

C. Strengthen commitment to a goal by making they work for it (e.g., seemingly against WE's will).

D. Weaken commitment by inducing belief THEY's asset is a liability he should discard.

1.1.1.3. Decrease perceived responsibility by dividing it:

- a. "Collective guilt becomes singularly absolving".

1.1.1.5.1. Build false hopes. (Hope for something of value can

be a major payoff in con games in which it is the result of intense belief and focus overriding the low validity and the low likelihood of obtaining the desired outcome. See also 4.4.2.3.1. Payoff Value).

- 1.1.1.6.4. Put THEY in a position where to disagree would make him look bad to himself or others (Logical Fallacy 27), or where to agree would make him look good. Have the deception put THEY in a position which makes him look good. (See also 4.4.2.3.1. Payoff Value).
- 1.1.2. Induce/capitalize on a change in activation threshold level (e.g., by 2.4.2.1.1.B.b.bb. increasing false alarm rate; 8.3.2. NOTE 3: partially dehoaxing a subject in an experiment involving nested deceptions, and thereby changing his expectations and making him more sensitive to the possibility of deception.)
- 1.1.3.A. Create or capitalize on emotional commitment
- 1.1.3.B. Arouse emotions (e.g., fluster, q.v.) to:
 - a. decrease available processing resources (2.1.).
 - b. manipulate or take advantage of motivation (1.1.1.); e.g., demotivate and disarm through depression.
 - c. distract THEY from something; cloud thinking.
 - d. make THEY lose sense of time.
- 1.1.4.A. Make THEY distrust own capabilities, information, or solution.
 - a. Provide an (alternative) explanation.
 - aa. which THEY prefers.
 - b. Feed recognizably false info into sensors or sensor buffers.
- B. Encourage unwarranted trust in THEY's capabilities.
 - a. Continue to emit obsolete data to encourage THEY's continued use of obsolete info processing methods (see also 6.MSS.5.2.D.c.).
 - b. Capitalize on ignorance of true sensor sensitivity especially under special circumstances.
- 1.3.A. Capitalize on inadequacies in THEY's conceptualization, comprehension, & inferencing (e.g., conditional probabilities are difficult to comprehend).(see 4.4.2.).
- 1.3.B. Justification.
 - a. Special pleading: applying a principle only in cases when it supports a given (THEY's) view (Logical Fallacy 32).
 - b. Special consideration: appeal to pity, extenuating circumstances (Logical Fallacy 39).
 - c. Fallacies: "Point to another wrong": "Every one else

does it"; "two wrongs make a right" (Logical Fallacy 41).

- 1.3.1.1. Induce/strengthen reliance on other's decisions.
 - a. Discourage skepticism & independent thought.
 - b. Encourage dependence and unquestioning info acceptance.
 - aa. Appeal to ignorance
("You don't know, so believe me").
 - bb. WE, in authority position, gives THEY faulty advice which makes THEY still more in need of or dependent on WE's advice.
 - c. Utilize herd instinct; peer pressure; fads; popular ideas (Logical Fallacy 24 part b). (Susceptibility affected by excitement; physiological/chemical changes such as adrenalin flow; motivational speeches; humor--it spreads.)
 - d. Create an imaginary new entity so THEY's only source information on it is from WE.
- 1.3.1.2.A. Make THEY believe he is in control:
 - a. that THEY has a plan that will accomplish his objective and can carry or is carrying it out. Play along with THEY's deception.
 - b. that THEY is obtaining information through his own efforts, and independently of WE's wishes.
 - c. that THEY is responsible for initiating the contact or event.
 - d. that events, especially THEY's losses, are due to his own actions.
 - e. that THEY has the advantage of practice, which in fact serves as a control condition for correctly interpreting his later actions.
 - f. that THEY, rather than someone else, has set the conditions for the "test".
- 1.3.1.2.B. Make THEY think he is "in on" the plan.
 - a. Multiple THEYS, "in on the plan" and cooperating, none of whom knows the deeper deception in which the plan is nested.
- 1.3.2.1. Induce/utilize belief which itself can produce the desired/expected effect (e.g., physiological effect; psychological effect; self-fulfilling prophesy; placebos).
- 1.3.2.2.A. Induce or capitalize on suspicions or conclusions caused by (false) allegations ("Where there's smoke, there's fire") (Logical Fallacy 28.).

- 1.3.2.2.B. Alter THEY's receptivity to information or a concept by changing his emotional state/ mood (see 1.1.3. & 4.4.1.3.2.1.) through employment of humor, ridicule, flattery, etc. (Logical Fallacy 38).
- 1.3.2.2.C. Induce/strengthen THEY's belief in something by virtue of THEY's involvement in it (see 1.1.1.5.4.).
- 1.3.2.2.D. Induce THEY to increase his receptivity to information (suspend his skepticism) by withholding information from him, thereby creating an "appetite" for information.
- 1.3.2.2.E. Induce THEY to accept an excuse (e.g. for a failure, an experiment failure, or for cheating) by inventing a characteristic which requires the behavior. (See also 4.4.1.1.2.2.A. Logical Fallacy 30, "The Good Reason").
- 1.3.2.2.F. Utilize THEY's beliefs and assumptions about plausibility (see also 4.4.1.1.2.1.):
 - a. Keep deception story within bounds which THEY believes to be plausible & a viable option for WE.
 - aa. If THEY won't believe a truth which WE wants THEY to believe (e.g., because it is astounding or unacceptable), then distort the truth to be within plausible bounds.
 - b. Make THEY's concept of WE's plan implausible, or select plan which THEY considers implausible:
 - aa. No possible means to goal; therefore either WE has a different goal or we will fail (note: the goal may be obtaining particular information).
 - bb. The particular means to goal is impossible; therefore either WE has a different goal, or WE has a different means to the goal, or WE will fail.
 - cc. Required preparation is not worthwhile or reasonable or probable.
 - c. Capitalize on improbable, special/unique cases.

1.6.1.1. (and)

1.3.2.2.G. Induce or capitalize on SELF-PERPETUATION OF BELIEFS, particularly prior or desired beliefs.

Note: Rationality is a self-correcting system of discovery; a rational attitude allows testing of beliefs. Rationalization consists of those processes which make beliefs self-perpetuating

regardless of the evidence.

- 1.3.2.2.G.a. Capitalize on THEY's strong tendency to believe what he wants to believe (Logical Fallacy 31--wishful thinking). (See also 1.1.1. Motivated behavior.)
- 1.3.2.2.G.b. Self-perpetuation of beliefs due to SUBJECTIVE VALIDATION, in which only evidence supporting the belief is sought, noticed, or fully processed/pursued. Non-supporting or contradictory evidence is not-noticed, ignored, interpreted as supporting, or disregarded. Also see other 1.3.2.2.G. headings.
 - aa. Source selection. Selective seeking, exposure to, or use of only those info sources which support current view (2.4.2. Info Selection). (See also 8.1.9.3.).
 - bb. Information selection. Capitalize on THEY's tendency to FAIL TO OBSERVE OR NOTICE, to ignore, or to suppress evidence which fails to support or which contradicts his current view (see also Logical Fallacy 34; 2.4.2. Info Selection).
 - cc. Information validation. Capitalize on THEY's failure to question evidence (e.g., "amazing results" of a psychic) which supports his current view.
- 1.3.2.2.G.c. Induce/capitalize on THEY's tendency to interpret or MISINTERPRET ALL EVIDENCE AS SUPPORTING or more favorable to one's preferred beliefs. Note: A "non-falsifiable" belief is one which any data likely to be obtained can be interpreted to support.
- 1.3.2.2.G.d. Capitalize on THEY's tendency to deduce without consideration of, or in spite of, the facts, especially on the basis of prior beliefs (Logical Fallacy 34), or when lacking information.
 - aa. Induce/capitalize on THEY's tendency to disregard or excuse contradictory evidence.
 - aaa. e.g., to hypothesize "if A then B", and then, when B fails to occur, to conclude that A needs to be done better, rather than that the hypothesis is false.
- 1.3.2.2.H. Capitalize on THEY's tendency to notice or concentrate on EXPECTED stimuli, successes, meaningful stimuli, and matches; and to fail to notice or ignore

UNEXPECTED or "non-" (meaningless) objects or events, such as a failure to match.

1.3.2.2.H.a. Capitalize on THEY's tendency to notice those things to which he has been alerted. (See also 0.B.b.aa. Expectation.)

aa. and to therefore subsequently perceive it as occurring more frequently than before.

aaa. "Illusionary correlation" is a type of subjective validation in which expected matches are imagined to occur more often than they really do.

1.3.2.2.H.b. Induce recognition of an incorrect pattern, e.g., by suggesting a particular interpretation of data ("suggestion").

1.3.2.2.H.c. Induce/capitalize on THEY's tendency to accept the apparent accuracy and specificity of matches between two descriptions or predictions, when they in fact are due to underestimation of the size of sample sets and the principle of EQUIVALENT ODDMATCHES rather than to any significant analytical or predictive power.

ODDMATCHES: The subjective "oddmatch" effect occurs when the matching of one event, such as a dream, with another, such as a subsequent happening, is perceived as unlikely (and perhaps paranormal) because of a failure to realize the very large number of opportunities for matches. A person may greatly underestimate the size of the sets of match candidates: (1) because he fails to notice many match candidates which do not occur, but which could occur; and (2) because he perceives what is actually a long-run situation (unlimited time) as a short-run situation.

Thus, an "oddmatch" situation is one with multiple "hit" endpoints (see also 8.8.6.2.D. "multiple outs"), and in which any of many possible matches produces the desired outcome. The principle of equivalent oddmatches is that any of these matches is as good as any other. People naturally mistake an "oddmatch" situation for a "probability match" situation with a single "hit" endpoint, for which only one possible match produces the desired outcome. (Reference: Marks & Kammann##, pages 24, 40, 158, 161, 166, 168). (See 4.4.3.5.2.).

- 1.3.2.3. Inappropriate weighting of info (e.g., unequal weighting of data when equal weighting is required.)
- 1.3.3. A. Oversimplification (Logical Fallacy 62). Prevent complete understanding of a complex situation.
- B. Assume linearity for a nonlinear system (See 4.4.1.1.2.A.c.cc. Unwarranted extrapolation of periodic function).
- 1.4.1.2.2.1.A. Enhance THEY's indecision by making all alternatives seem:
 - a. equal.
 - b. bad (Logical Fallacy 43).
- 1.4.1.2.2.1.B. Hinder THEY's decision by limiting THEY's analysis resources.
 - a. Induce failure of THEY to examine all data before making decision.
- 1.4.1.2.2.1.1.A. Induce a quick (hasty) decision:
 - a. Limit analysis time (desperation, urgency) (e.g. to limit info sources, competition, etc.) (e.g., by manipulating payoff matrix as function of time).
 - b. Arouse THEY's emotions.
 - c. Induce belief THEY has sufficient or all available data.
 - aa. fit THEY's preconceptions.
- B. Slow THEY's decision by introducing uncertainty:
 - a. Make THEY consider possibility of deception.
 - b. Use confusion or contradiction.
 - c. Distort THEY's perception of progress towards a solution.
- 1.4.1.2.2.1.4. Conceal/disguise criticality of THEY's critical decisions.
- 1.6. Induce THEY to make a faulty GENERALIZATION (see also 4.4.3.5. Logical and Intuitive reasoning & judgement):
 - a. (Logical Fallacy 01.) Hasty generalization from insufficient sample/data.
 - b. overgeneralize (use of general characteristic of inhomog group). (Overgeneralization of statistical base.)
 - c. population stereotype (non-use of gen char of homog group)
 - d. sweeping generalization (without taking into account special circumstances--reverse direction from overgeneralization).

- e. Fallacy of composition (if true for each member, then true for the group as an entity) (Logical Fallacy 09).
 - f. Fallacy of division (if true for group as a entity, then true for each member) (Logical Fallacy 10).
 - aa. Statistical average for group applies to each member.
- 1.6.1.1.A. Induce/capitalize on plausible, but erroneous assumptions which are used implicitly or automatically during organization and categorization of (e.g., input) data (e.g., assumptions about the results of data handling processes or transformations). (See also 4.4.1.1.2.1.).
- a. Induce THEY to erroneously assume temporal or spacial continuity.
- 1.6.4.A. "Reification" or "Hypostation"-- Making an abstract concept into a substance (Logical Fallacy 15.).
 Personification-- Attributing human characteristics (e.g., intent, motivation, emotion) to non-human creatures or objects (Logical Fallacy 35).
- 1.6.4.B. Word Magic: because the word exists, the thing does (Logical Fallacy 19). (E.g., the average person who has 2.3 children; fate).
- 1.6.4.1.2.A. Induce THEY to assume a cause due to spacial or temporal (observe A & B, assume A causes B):
- a. proximity or sequence (Logical Fallacy 04. "Assuming the cause").
 - b. relation.
 - c. exclusion.
 - d. (Logical Fallacy 07) correlation (e.g., covary normally unrelated events).
- B. Faulty causal generalization (observe B, assume existence of A--reverse of assuming the cause) (Logical Fallacy 05.).
- C. Faulty ultimate cause (mistake triggering event for ultimate cause) (Logical Fallacy 06.).
- 1.6.5.A. Simulate, substitute, or disguise to fit a known pattern (see also 6.MSS.5.)
- B. Induce recognition of expected pattern by providing partial info compatable with it; e.g., by providing pieces of an item, or by providing items ,personnel,

events, or activities obviously associated with it. (The parts imply the existence of the whole).

a. (Also: recognition of a stimulus may be suppressed by the use of incongruent stimulus, e.g., by dominance of one member of a set over others.)

C. Induce finding of non-significant pattern post-hoc so THEY wastes future resources searching for it, or is unjustifiably confident he knows situation.

D. Fit pattern THEY expects and/or seeks to achieve goal.

E. Make pattern unrecognizable by restructuring input data.
a. Provide incorrect segmentation.

F. Capitalize on the ambiguity of stimuli with multiple interpretations by providing suitable context; E.g., visual illusions such as figure-ground reversal; pictures with two or more visual interpretations.

1.6.5.G. Use of misleading or ambiguous appearance of data (e.g., visual illusions) to manipulate THEY's interpretation of data (e.g., a comparison).

1.6.5.H. Faulty analogy (Logical Fallacy 08). Relate to common, but inappropriate experience.

1.6.5.I. Dissimulate something; e.g., a capability. Cause failure of recognition of a pattern by providing data incompatible with it.

1.6.5.2.A. Employ "branding" or "name-calling" to induce inaccurate classification (e.g., capitalize on the "Them vs Us" mentality by branding a third party as the "enemy").

1.6.5.2.B. Induce or capitalize on THEY's tendency to be unable to see alternative interpretations once the first one has been established (i.e., once a "Gestalt" has been formed, or "closure" has occurred.) The initial impression is crucial, since the system uses it as a basis for finding a pattern match.

1.6.5.2.C. Faulty set definition.

a. Sampling: sample set not as implied);
Sample from inappropriate
(nonrepresentative) subset (Logical
Fallacy 02.).

b. Non-exhaustive classification
(classification does not include all
cases) (Logical Fallacy 13).

- c. Non-exclusive classification
(classification does not uniquely classify each case) (Logical Fallacy 14.)
 - D. Unnecessary vagueness (Logical Fallacy 17).
(See also 4.4.1.1.2.A.c.aa.).
 - E. Overprecision (specify more precision than is justified by measurement or method) (Logical Fallacy 18). Unwarranted or unnecessary accuracy.
 - a. Can't make any decision unless something is defined in its entirety.
 - b. Demand precise definition of something which can't be defined.
- 1.6.6. Relativitism (Logical Fallacy 16.). "All things are relative"; no essential or absolute features.
- 1.6.7. Orchestrate multiple actions to achieve a unified deceptive effect.
 - 1.6.7.1. Capitalize on THEY's established behaviors and actions.
 - a. Evoke from THEY an inappropriate or self-defeating response (e.g., by misleading THEY as to nature of threat & context, evoking the corresponding countermeasure).
 - b. Capitalize on THEY's tendency to see new information in terms of his old framework and questions, even when new ones are required.
 - c. Induce THEY to utilize outdated policy or other behaviors which were established on the basis of beliefs no longer held, but which are difficult to identify and change when beliefs change. Subgoals may take on a "life of their own" even after the goals they support are obsolete.
 - 1.6.7.2. Teach THEY something WE can exploit.
 - 1.6.7.3.1.1. Capitalize on situation known to cause delay (e.g. to buy time).
 - 1.6.7.3.2. Induce THEY to use up resources at wrong time or place.
- 1.8.5. Induce info loss before storage in LTM.
 - 1.8.5.1. Wait for info to decay with time.
 - 1.8.5.2.1 Overload working memory with relevant information.
 - 1.8.5.3. Induce belief that info is irrelevant or obsolete.

- 1.8.5.4. Give competing task to interfere with rehearsal process.
- 1.8.8.2.2. Provide an alternative explanation (or "cover") to mislead THEY regarding the purpose of current processes, e.g., regarding the means of obtaining information.
 - 1.8.8.2.2.1.A. Induce desired action by creating incorrect context and thereby making the desired action appropriate rather than inappropriate.
 - aa. Artifice: manipulate context to make a lie more believable.
 - B. Influence THEY by using ceremony & setting (Logical Fallacy 21).
(E.g., by persuasion, affecting emotions, goals, priorities, scheduling, etc. See section 1.1.)

CONTROLLER PRINCIPLES

2.3.1.A. Manipulate THEY's information processing strategy or (automatic) problem solving procedure.

B. Induce THEY to apply wrong processing strategy; e.g., induce THEY to commit himself to a particular strategy, and thereby lose flexibility, before he has sufficient information to select the correct strategy.

- a. Provide obvious but incorrect processing goal.
- b. Provide, or provide data which induces, obvious but incorrect proc rule or strategy.
 - aa. Provide large amount of info to support wrong strategy, to direct attention away from right one.
- c. Induce processing strategy which discards or fails to recognize and utilize relevant info.
- d. Lead THEY away from correct proc rule or strategy.

2.3.1.1.4.A. Teach (brainwash) a new (automatic) process and then capitalize on the new behavior.

- a. Classical (Pavlovian) conditioning to produce conditioned reflex (e.g., by using fear, shock, etc).
- b. Operant conditioning (shaping a behavior by rewarding the closest occurring behavior whenever it occurs).
- B. Capitalize on non-lateral thinking; get THEY committed to a reasonable but wrong interpretation, thus preventing recognition of correct interpretation.

2.3.1.1.5.A. Allow insufficient processing time.

- B. Induce THEY to allot insufficient processing time.
 - a. Distort THEY's time sense.
(e.g., induce emotions; confuse, panic, make busy, make enjoyable).

2.3.1.2.1. Induce/capitalize on the inflexible use of habitual or automatic processes by:

- a. Having THEY invoke the incorrect one of two processes with identical beginnings.
- b. Having THEY invoke a usually appropriate process, for a particular, inappropriate situation.
- c. Having THEY invoke, and then fail to stop a longer process, only the first part of which is required.

2.4.2. Control or limit THEY's information input.

- a. Supply information which supports one's hypothesis,

especially in large quantities, and omit the rest.
(See 4.4.1.1.2.A.b.aa.).

2.4.2.1. Manipulate or capitalize on percent attention is engaged.

- a. Emphasize key points WE wants THEY to remember (e.g., by using timing, routining).
- b. Feed THEY info WE wants THEY to appreciate.

2.4.2.1.1. RELAX Attention.

2.4.2.1.1.A. Create belief that analysis is unnecessary.

- a. Seem above suspicion.
- b. Seem not worth attention or evaluation ("be natural").
- c. Seem innocuous, esp. completely outside or contradicting THEY's expectations.

B. Create belief nothing much or unusual is happening (de-emphasis).

- a. Fit THEY's image of situation & context (keep emphasis and overall balance within expected range).
 - aa. Simulate background.
 - bb. Simulate an irrelevant event.
- b. Change THEY's image of situation and context so that desired deceptive event, alerting event, or alerting cessation of an event will fit (preconditioning; establish potential alerting condition as common place) (e.g., anesthetize defenses; hold regular military maneuvers or demonstrations).
 - aa. Modify, in advance, background, irrelevant or relevant event, or many events to look like deceptive event.
 - bb. Increase false alarm rate to excess so alarms ignored.

C. Utilize a rhythmical timing pause; ie, capitalize on THEY's natural tendency to assume there is little happening on the off-beat.

D. Create boredom (anticipation of nothing happening).

- a. By repetition and monotony.
 - . Often, three times is about right, and five times seems endless.
 - . Metrically; pace & rhythm are important.
- b. Implication (imply a method; imply subsequent proceedings).

- E. Create belief that analysis is complete.
 - a. Event is completed ("natural conclusion").
 - b. THEY believes he can adequately predict future events.
 - aa. create a pattern, e.g., by repetition.
 - bb. imply a well-known procedure.
 - c. THEY is no longer attending because he has already examined the object (e.g. before covert substitution).
- 2.4.2.1.2. Control processing effort needed for detailed examination (See also 2.4.2.2.3.1. Divide Attention).
 - a. Increase required processing.
 - aa. have key item be one of many.
 - bb. misfile item.
 - b. Decrease required processing.
 - aa. Induce THEY to make a quick exam & move on.
 - c. Capitalize on THEY's low level of motivation (q.v.).
 - d. Manipulate THEY's pattern recognition criterion.
- 2.4.2.1.4. Overload THEY's processing resources.
- 2.4.2.2. Manipulate (control) THEY's attention, & capitalize on where it is directed (e.g., misdirection).
 - a. Factors: appearance, size, shape, intensity, color, frequency, & other attributes of stimulus; spacial and temporal magnitude of movement; contrast; novelty; dominant member of set (e.g., Ace of Spades stands out in a group of cards); compromise (e.g., a person selects the only member of a group which does not stand out). THEY's desires and needs; interesting activity.
- 2.4.2.2.1. A. Shift or attract THEY's attn to something WE wants THEY to find and appreciate.
- B. DIVERT all of THEY's attention to something to prevent THEY from attending to the correct means to a goal, to thinking laterally, or to a deceptive event. Use successive diversions, each of which covers the deceptive preparation for the one which follows it.
 - a. provide alternative goals or means (see EXEC)
 - aa. Propose impossible task or illusionary solution (e.g., to use up THEY's time or processing resources until it's too late); (refuse to accept less than perfection)

(Logical Fallacy 44).

b. Simulate a relevant event, especially a high-interest event or activity, or the presence of an important item or person. Or exaggerate the importance of an irrelevant event (Logical Fallacy 40 -- red herring).

c. Induce or capitalize on THEY's belief that his enemy is a third party rather than WE, especially when WE pretends to be THEY's friend (8.8.6.2.A.b.).

C. Attract THEY's attn to desired info by providing incidental clues for THEY to follow.

D. Use an irrelevant argument or proof (Logical Fallacy 55 --irrelevant thesis) to exaggerate and call attention to an irrelevant point and away from the relevant one.

E. Types of diversion:

aa. External to the event (digression).

bb. Integral to the event:

i. Switch (sidetrack).

- . Should wait for the right cover.

ii. Mask (screen secret events from THEY's view).

iii. Disguise (dual purpose).

- . Having THEY properly motivated to expect the disguise is key.

iv. Pointing (pause- action- pause; make secret move during the action).

- . Timing and smooth performance are key; pauses are on the downbeat, the action on the upbeat.

v. Climax (use the climax of one event to hold THEY's attention away from the deceptive preparation for the next event).

2.4.2.2.2. HOLD THEY's attention.

a. Substitute fake and covertly remove original or vice versa.

aa. without lapse of they's attention.

bb. utilize continuity during brief interruption of observation (see EXEC, also).

2.4.2.2.3.1.1. DIVIDE (DISTRACT) THEY's attention among relevant events (e.g., feints, negotiations, etc.) ("integral distraction").

- a. contradiction.
 - b. confusion (def: uncertainty as to what data is relevant, or how to analyze data); create a mild commotion.
 - c. flustering (def: utilization of processing resources by emotion).
 - aa. by flattery.
 - bb. by accusation.
 - d. perplexity (def: uncertainty as to meaning of puzzling analysis results, or how to continue complicated data analysis; due to something which is complicated, involved, or puzzling).
- 2.4.2.2.3.1.2. DIVIDE THEY's attention among irrelevant events ("external distraction"). (E.g., provide a brief, but well-timed incident which temporarily demands THEY's attention).
- a. Startling (e.g., explosion).
 - b. Incidental (e.g., girl on stage) (a natural or expected event).
- 2.4.2.2.3.2. Direct THEY's attention to specific aspect (e.g., a hazard), so others ignored or THEY loses overall perspective.
- a. so THEY misses big picture (forest for trees).
 - b. so THEY loses temporal perspective.

4. MANAGER PRINCIPLES

4.3. K-BUILDING PRINCIPLES have been combined with the K-USING MANAGER principles in this edition.

4.4. K-USING PRINCIPLES

4.4.1.1.1. Affect/capitalize on THEY's goals & priorities (Note: evaluate and predict THEY's goals).

- 4.4.1.1.1.1. A. Induce THEY to establish a goal or subgoal which:
 - a. is new, and of equal or higher priority.
 - b. works against THEY's intent.
 - aa. pursues (apparently accidentally) sacrificial bait which lures THEY into disadvantageous position.
 - c. is non-optimal.
 - aa. due to THEY's compromise with WE's falsely stated goal.
 - d. is irrelevant or a decoy.
 - e. is an additional concern.
 - f. is defensive rather than offensive.
- B. Resurrect a previously satisfied goal of higher priority.
- C. Induce or capitalize on THEY's efforts by having their ultimate effect be toward a higher level goal WE desires.
- D. Induce THEY to commit a partial investment toward an initial goal, and then induce THEY to change his goal to a different one WE prefers, e.g., by allowing THEY to see that his original goal was not worthwhile (bait and switch).

1.6.1. (and)

- 4.4.1.1.2. A. Induce desired decision based on partial information:
 - a. Provide info supporting desired decision first.
 - b. Omit info:
 - aa. opposing desired decision.
 - bb. to produce a biased picture.
 - cc. Suppress quantification info: omit "some" or "all" (Logical Fallacy 47).
 - c. Induce THEY to fill in own info.
 - aa. provide ambiguous info (e.g., omit units; ambiguous written letters with more than one interpretation depending on context.)

NOTE: An unsophisticated THEY (such as a child) routinely observes more general detail than a sophisticated THEY (such as an adult) because he has not yet learned to fill in as much information from previous experience. His attention shifts more easily: it is easier to misdirect, but is also more likely to shift again to the "wrong place".

bb. provide ambiguous language structure (e.g., THEY understands first meaning; second one is true; literal use of figure of speech, or vice versa; ambiguous sentence structure, accent or stress, word order, or punctuation (Logical Fallacy 49)).

cc. unwarranted extrapolation (e.g., on the basis of a partial cycle of a periodic function).

dd. emphasize a characteristic of an item to induce THEY to falsely infer that it is a unique characteristic which does not apply to the items in the complement set.

d. Provide part of surface structure to imply false deep structure (e.g., quote out of context).

B. Induce desired decision by providing contradictory information (Logical Fallacy 53) (e.g., words used in opposition to meaning, such as Orwell's 1984 slogan "War is peace").

1.6.1.1.

4.4.1.1.2.1.A. Go outside the subconscious assumptions THEY has.

a. Violate THEY's assumption that what is trying to avoid him will remain out of his sight, for example put item or info where it is obvious, and therefore not expected.

b. Have sought item or solution outside normally considered set (or involve additional spatial dimension, make solution dynamic rather than static, etc).

c. Lead THEY to overlook the correct solution by making others' actions or his task seem illogical or unnecessary if he knew what the correct solution was. (e.g., by an action which is "bold", or completely unexpected;

"hutzpah", nerve, gall.)

aa. Challenge THEY on the same point WE is using deceptively.

d. See 1.6.1.1.A. re erroneous automatic assumptions.

e. Capitalize on cultural or popular values, biases, & prejudices (Logical Fallacy 25 & Logical Fallacy 36). (See also 8.8.1.)

1.6.1.1.

4.4.1.1.2.1.B. Get THEY to accept an assumption which presumes the existence of something imaginary. (Note: counterdeception is difficult because THEY must identify ALL his assumptions.)

1.6.1.1.

4.4.1.1.2.1.C. Get THEY to accept the erroneous assumption of a third party by providing intent information from the third party's viewpoint.

1.6.1.1.

4.4.1.1.2.1.D. Induce/capitalize on THEY's failure to scrutinize basic or implicit assumptions; to "take things for granted". (See also 1.3.2.2.)

a. Use unproven "facts" to prove something (Logical Fallacy 52.).

b. Circular reasoning (Logical Fallacy 51.).

c. Use a leading question, which assumes its own answer (Logical Fallacy 63.)

d. Complex question, which assumes a fact related to its answer (Logical Fallacy 54.).

1.6.1.2.

4.4.1.1.2.2.A. Provide alternative hypotheses for THEY so THEY needs to consider them in addition to, or (Logical Fallacy 30 "The Good Reason") will consider them instead of, the correct one.

a. Protect info sources by providing plausible alternatives.

b. Implicitly provide an alternative question to consider (e.g., consider means rather than the end: Instead of arguing against something, give an excuse why it can't be done (Logical Fallacy 58)).

B. Get THEY committed to an incorrect hypothesis (e.g., by emphasizing a false "fact").

1.6.1.3.

- 4.4.1.1.2.3. Capitalize on THEY's belief about the probability of deception:
- a. Induce/capitalize on the belief that there is more deception than there is.
 - aa. Capitalize on behavior introduced by suspicion.
-- use "reverse psychology": tell truth in a way such that THEY believes it is not true.
 - bb. Slow THEY's decisions & actions by making him overly cautious.
 - b. Induce/capitalize on the belief that there is less deception than there is (THEY may be less vulnerable if he knows he has been deceived before).

1.4.2.

- 4.4.1.3. Abandonment of discussion (Logical Fallacy 45).
(WE abandons discussion to lead THEY away from further pursuit of a line of reasoning. WE claims discussion is unnecessary, irrelevant, indecent, immoral, unpatriotic, etc.; or abuses THEY using ad hominum; etc.)

1.4.2.1. &

- 4.4.1.3.1. Induce THEY to establish means which:
- a. are non-optimal (require more work).
 - b. work against THEY's intent.
 - c. lead in wrong direction (ask wrong question; solve wrong problem; false lead; red herring).
- 4.4.1.3.2.1. Anesthetize critical faculties (e.g. by flattery).
- 4.4.1.3.2.2.4.A. Demonstrate initial success (e.g., a pyramid scheme; a "Ponzi" scheme).
- B. Reinforce THEY's belief that he is attaining his goal.
 - C. Induce THEY to believe the goal he seeks has already been achieved (may be processed by CONTROLLER).
 - a. found info he seeks.
 - b. found info source or channel he seeks.
 - c. has already "observed carefully".
 - d. has already seen through the deception.
 - e. mission accomplished.
 - f. goal is obsolete.
- 4.4.1.3.2.2.8.A. Provide THEY with false feedback where none exists, and use it to control THEY's actions or responses.

- 4.4.1.3.2.2.8.B. Induce THEY to interpret (uncoupled) data as feedback bearing on a decision.
- 4.4.1.3.2.3. A. Level of detail that THEY will examine is crucial, and depends on the scale (size) of the deception, THEY's available resources, and THEY's level of suspicion. To provide THEY with picture complete down to smallest detail (e.g., in case THEY checks):
 - a. Play role exactly as if it were true (viz a theatrical act).
 - b. Cover all sensors.
- B. Allow, or subtly induce, THEY to evaluate data critically where or when there's nothing to find which will weaken his (deceived) picture.
- 4.4.1.3.2.4. Induce THEY to make incorrect predictions, and, therefore, to have false expectations.
 - a. by providing faulty input data.
- 1.4.2.3. &
- 4.4.1.3.3.2. Induce THEY to change priorities among goals
 - a. to non-optimal priorities.
- 4.4.2.A. Change actual payoff matrix without THEY's knowledge.
- 4.4.2.B. Change (manipulate) THEY's perceived payoff matrix as a function of time.
 - a. Planned obsolescence.
- 4.4.2.C. Manipulate/misrepresent THEY's perceived payoff matrix to control decisions.
 - a. get initial commitment (e.g., of money, time, involvement) before modifying payoff matrix.
 - b. Also 4.4.2.1.2. Claim imminent loss is likely (e.g. emergency exists) (false warning).
 - c. Claim imminent change in supply, price, or reward.
 - d. Manipulate impact of changes in matrix values.
 - aa. Control info flow to THEY about changes.
- 4.4.2.1.1. Assuming a dichotomy for a continuum of possibilities.
 - a. All or nothing mistake (assuming one must have all or none) (Logical Fallacy 11).
 - b. False dilemma (assuming one must have condition A or B, but not both; that only one can be right) (Logical Fallacy 12).
 - c. Falsely imply A & B make up the entire set of possibilities.
 - aa. Then convince THEY that C is true because both A and B imply C.

- bb. "The wicked alternative"-- since one alternative is obviously wrong, another, falsely assumed to be the only other choice, must be right (Logical Fallacy 42).
 - cc. Choose A & B so THEY selects the one WE desires because it is the lesser of two evils.
 - d. Claiming that, since one can't prove A, NOT-A must be true (Logical Fallacy 57).
- 4.4.2.2.1. Make THEY work hard for partial recovery of loss to change his perception of the possibilities, and to divert his energy from his original complete-recovery goal.
 - 4.4.2.3.A. Research THEY's needs and offer something THEY needs, or that WE can persuade THEY to want.
 - 4.4.2.3.B. Fabricate an imaginary entity that THEY wants.
 - 4.4.2.3.C. Show THEY apparent results of selecting alternatives.
 - 4.4.2.3.1.1. Use positive social motivating factors (see 1.1.1.5.).
 - 4.4.2.3.1.2.A. Decrease perceived value of outcome.
 - a. Make seem obsolete.
 - aa. New situation.
 - 4.4.2.3.1.2.B. Use negative social motivating factors to make THEY unwilling to oppose an idea.
 - 4.4.2.3.2.A. Make outcome in THEY's favor have zero probability without THEY's knowledge.
 - B. Shift THEY's matrix probability values by a rigged example, especially one in which his skepticism causes him to miss a "genuine opportunity".
 - 4.4.2.3. &
 - 4.4.2.3.2.C. Change perceived false alarm (FA) rate (cry wolf).
 - 4.4.2.4. Establish good associations; appeal to tradition (or faith?) ("because it has worked, been good, been done in the past, it should be done now") (Logical Fallacy 23).
 - 4.4.2.4.2.2.A. Bluff.
 - 4.4.2.4.2. Misrepresent WE's or third party's attitude towards value of something in order to influence THEY's perception of its value.

- 4.4.2.4.2.2. If THEY wants to maintain the status quo in a hostile situation, and WE makes confusing signals, then THEY will probably procrastinate unless he perceives risk in waiting, in which case he will probably start early action.
- 4.4.3.5.A. Induce/capitalize on THEY's use of intuition instead of logic.
- 4.4.3.5.B. Falsely conclude a parameter is significant (e.g., by "lying with statistics").
- 4.4.3.5.C. The use of non-independent samples as though they were independent sources of information may lead to overconfidence.
- 4.4.3.5.D. Assuming dependence of independent data (Logical Fallacy 37); i.e., the assumption of relationships which don't actually exist.
 - 4.4.3.5.1.A. "Undistributed middle". Unwarranted transfer of a characteristic via an intermediate set (Logical Fallacy 46); e.g.:
 - (1) A is B, C is B, so A is C.
(e.g., guilt by association.)
 - (2) A is B, some B is C, so all C are A.
 - (3) For further examples, see logical fallacies references (e.g., Fernside).
 - 4.4.3.5.1.B. Unequal negation (Logical Fallacy 61):
 - No A are B, No C are A, so all C are B.
 - All A are B, All B are C, so some C are not A.
 - 4.4.3.5.1.C. Non sequitur (Claiming falsely that A implies B) (Logical Fallacy 48). False converse (A implies B, so B implies A). Incorrect conditional (A implies B, so NOT-A implies NOT-B). Incorrect alternatives (A or B, so A implies NOT-B).
 - 4.4.3.5.1.D. Claiming that the exception proves the rule (Logical Fallacy 60).
 - 4.4.3.5.1.E. The "thin, entering wedge" (Logical Fallacy 59). The domino theory. Once allowed to start, it will not be stoppable as scheduled. "Give them an inch and they'll take a mile.
- 4.4.3.5.2. Capitalize on intuitive estimation biases.
 - a. See characteristics.
 - b. See 1.3.2.2.G. Subjective Validation;
& 1.3.2.2.H. Oddmatches.

- c. Humans are poor at estimating combinations of events.
- d. Humans are poor at estimating randomness (e.g., they tend avoid repeated numbers when generating a random string of numbers).
- e. Overconfidence increases with increasing odds, such that an amount bet increases too fast and long-run expected losses increase.

4.4.3.5.2.1.A. If something normally present is not normally observed and is believed absent, claim WE caused it and instruct THEY to observe it. (e.g., focus attention on a particular feature, such as a match between two events.) (See also 1.3.2.2. Belief: Oddmatches).

4.4.3.7.A. Improper comparison.

- a. compare noncomparables ("apples & oranges").
- b. look at gross numbers rather than proportions, or vice versa.
- c. refer to "all else being equal" when all else is not equal.
- d. due to improper data reduction.
- e. change emphasis by comparing something with "all others" when there are significant others worthy of individual consideration.

4.4.3.7.B. Improper scales and baselines.

- a. omit or use improper (e.g., non-zero) baselines.
- b. comparative rather than absolute basis.
- c. fail to normalize.
- d. Change scale between graphs.
- e. pick scales (absolute number, percent, linear, logarithmic, etc.) to emphasize desired relationship.
- f. Omit relevant info; e.g., give mean, but no distribution.

SENSOR PRINCIPLES

6.0.A. Emit a false signal.

6.0.B. Deny close observation.

6.MSS.1. Avoid detection (deny sensor input, camouflage, cover, hide, secret compartment.)

6.MSS.1.1. Evade sensor coverage area (spatial & temporal)
a. Capitalize on gaps within the coverage area of which THEY is unaware, or which THEY ignores.

6.MSS.1.2. Make invisible by decreasing S/N ratio (decrease S &/or increase N) to below detection threshold.

6.MSS.1.2.1. A. Operate below sensor absolute sensitivity threshold.

B. Decrease sensor sensitivity.

a. Habituation.

b. Fatigue.

c. High intensity stimulus at boundaries of area of interest.

d. Supersaturation of sensor.

C. Deflect "illumination" so object is not illuminated.

D. Deflect "illumination" so it is not returned to sensor.

E. Make object "transparent".

F. Change (e.g., increase) signal strength to misrepresent source characteristics (size & distance).

6.MSS.1.2.2. Mask (or "jam") with:

a. noise.

b. other stimuli.

aa. Large deliberate motion to cover smaller secret movement.

bb. Swift deliberate motion to cover slower secret movement.

6.MSS.1.3. Use up limited sensor capacity (e.g. one shot device).

a. Trigger one-shot sensor (or alarm) so it can't detect (or warn of) the presence of a second object.

6.MSS.1.4.1. Capitalize on sensor spatial discriminability limits.

A. Get close to and blend in with a background (or other) object (e.g., "black art").

B. Move several objects close together so they appear to be only one.

C. Capitalize on sensor spatial resolution limits

(e.g., depth perception).

- 6.MSS.1.4.2. Capitalize on sensor temporal discriminability limits. (E.g., sensor tracking or focusing time, observation sampling time, sensor storage time, sensory integration time).
- 6.MSS.3.2.A. Degrade signal to decrease accuracy of feature perception.
- 6.MSS.5.2.A. Induce or capitalize on inaccuracies in THEY's perceptual processes. (See also 1.6.5. EXEC for high level processes; and 6.MSS.7 for effects due to reference values & feedback). E.g.:
 - a. Violate constancy expectancy to produce distortions of color, size, distance, form, angles, direction; e.g., size illusion induced by comparison with memory.
 - b. Use systematic errors in extrapolation or perspective to induce distortions of shape or orientation.
 - c. Use spatial context to induce size changes.
- B. Induce brain to provide its own sensory data to fill in for missing or ambiguous data (analogous to 4.4.1.1.2.A.c.).
 - a. Cause failure of the process.
 - b. Illusions caused by ambiguous perspective.
- C. Dissimulate (simulate the absence of) something (e.g., object, capability, etc.) which is present. (Control detectable stimuli to be compatible with the absence of something, and apparently incompatible with its presence.) Provide cover. (See also 6.MSS.1. Avoid detection.)
 - a. Mask with a superset (blend with another signal). Obscure boundaries (disruptive patterns; countershading).
 - b. Make signal blend with background.
 - c. Make background blend with signal.
 - d. Use a new, apparently random pattern (which THEY has not yet learned).
 - e. Provide data incompatible with the presence of something.
- D. Simulate something (which does or doesn't exist). (May use decoys, lures, fakes (seen), shells, disguises, dummies, duplicates, positions &

motions.)

- a. Simulate something else.
 - aa. impersonate.
- b. Simulate unimportant objects.
 - aa. disguise as one of many objects.
- c. Simulate important objects.
 - aa. Simulate same (hidden) object elsewhere.
 - bb. Simulate inputs and outputs to induce THEY to infer the existence of structure, content, or processes.
 - cc. Simulate something using a fake which is disposable or easily hidden.

- E. Substitute/switch one object for another, especially under cover. (See 1.6.1.1.A.a. continuity; 8.3.A.).
 - a. faked object for real; or defective objects for quality ones (e.g., spare parts).
- F. Change features often (use substitutes) to prevent learning which features belong to the pattern.

- 6.MSS.7. A. Induce sensory imbalance by selective fatigue.
- B. Induce sensory imbalance by sensory deprivation.
 - a. Disorient all or part of the cognitive system by denying sensory feedback/ref stimuli.
- C. Induce/capitalize on loss or distortion of spatial reference.
- D. Induce/capitalize on loss or distortion of temporal reference (e.g., loss or distortion of sense of time during sleep or intense activity). (See also 2.3.1.1.5.B.a.).
- E. Induce perception of opposite characteristic by contrast effects. E.g.:
 - a. color contrast;
 - b. brightness contrast (brightness changes induced by brightness context;

AFFECTOR PRINCIPLES

- 7.AA.1.3. Induce THEY to expend limited affector resource uselessly.
- 7.AA.5. Capitalize on affector's inflexible action (speed or accuracy) when driven by preprogrammed (or automatic) routine (eg, a feint). (See also 2.3.1.2.1. Dependence on Automatic Processes.)
 - 7.AA.5.1. Capitalize on affector's speed limitations or response time (refractory period) in performing a task:
 - a. Influence THEY's free decision with a candid gesture or statement, the falseness of which will not be discovered until too late.
 - b. Cause action from which they cannot recover in time to respond to WE's next action.
- 7.AA.7.A. Cause change in reference position or equilibrium.
 - a. fatigue selected effectors.
 - B. Delay feedback to make fb-dependent processes "stutter".

8. LONG TERM MEMORY (LTM) & WORLD IMAGE PRINCIPLES

- 8.1.9. Utilize or manipulate THEY's belief about info validity.
 - a. Appeal to decision & judgement processes (1.6.).
 - b. Bias/slant information when transmitting it.
 - aa. provide commentary.
 - bb. use colorful language (Logical Fallacy 20).

- 8.1.9.3. Establish trust in the info, source, or channel so THEY will utilize it. To make WE or other source appear reliable, establish confidence in info; and vice versa.

EITHER INFO OR SOURCE (IS):

- a. Provide apparently true or expected info, or simulate a trusted source.
- b. Provide corroborating info from multiple "independent" sources (e.g., collusion).
- c. Give THEY a stake in the info or source being (e.g., emotional; cherished beliefs; vested interests; social; claim THEY has succeeded)
- d. Create what THEY seeks or can be induced to seek as a sign of source validity.

INFO ONLY (IO):

- a. Provide initial apparent verification of validity.
- b. Make THEY work for info.
- c. Make it appear obtaining info is against WE's will or hurts WE.
- d. Appeal to the authority of misunderstood "modern" advancements (e.g., "science", "experiment", "quantitative measures", photographs <which are believed accurate, but need not be>, medicine. See 1.3.2.

SOURCE ONLY (SO):

- a. Maintain a high truth-to-error ratio. Keep the deceptive indicator frequency less than the channel error rate. A reliable source can provide deceptive info only rarely. Leak valid but minor info, or important but known info, thru known agent. (Move to SI).
- b. (Logical Fallacy 22.) Employ a perceived "authority".
 - aa. e.g., popular, trusted, famous; even if unqualified, inappropriate, or only tenuously associated with topic.

- bb. e.g., work under the auspices of an authority.
- cc. Use majority or prevalent opinion to persuade THEY to jump on the bandwagon (Logical Fallacy 24).
- dd. Reference a reliable source of closely related information (as the source of the deceptive information).
- c. Induce false belief in third party before relay to THEY (e.g., before capture & interrogation).
- d. Make collaborating sources appear independent.
- e. Make THEY believe THEY controls source.
 - aa. Make establishment of new sources appear accidental or initiated by THEY.
 - bb. Utilize/intrude on THEY's own communication channels.
- f. Source (or any deceiver) should play the expected role (e.g., act confident).
- g. Conceal WE's interest in source (control or use).
 - aa. Covertly manipulate third parties by baiting.
 - bb. Covertly utilize visible stooges:
 - establish an agent as one of THEY's team. e.g., first establish long term relationship ("mole").
 - enlist one of THEY's team as an agent.
 - obtain assistance from actor in antagonist role.
 - cc. Covertly utilize hidden stooges:
 - relay info from encounter area when WE and THEY are away.

8.1.9.4. Discredit info, source, or channel so THEY will disregard it.
 To make source appear unreliable, discredit info; and vice versa.

EITHER INFO OR SOURCE (IS):

- a. Provide recognizably false info
- b. Change apparent info quality
- c. Make THEY believe WE wants THEY to accept the info.

INFO ONLY (IO):

- a. Induce or capitalize on dislike or distrust of source to induce distrust of information. ("Damning the origin": since dislike source, info must be wrong; Ad hominum: attack the source rather than the information (Logical Fallacy 26.)). (Opposite of

appeal to authority Logical Fallacy 22).

SOURCE ONLY (SO):

.. . . .

- 8.3.A. Cause incorrect correlation of real or stored information.
 - a. of multisensor inputs.
 - b. So THEY believes 2 items exist instead of 1 (correlation failure).
 - c. So THEY believes 1 item exists instead of 2.
 - d. So THEY's memory rep refers to wrong real-world item.
 - e. Misuse of etymology (assuming falsely that a concept should be closely related to the origin of words describing it) (Logical Fallacy 50).
- 8.3.B. Cause improper associations and organization during storage.
 - a. Use "brute force" (brainwashing) to create memories or associations. See 1.1. "Brainwashing".
 - b. Use context to cause improper associations and organization during storage.
 - aa. Use incorrect context.
 - bb. Use unusual context which seems usual.
 - cc. Induce THEY to discard correct context.
 - dd. Induce THEY to store unrelated items in close "proximity" and to forget they are unrelated (e.g., by presenting them in close temporal or spatial proximity and following them with a mass of new information).
 - c. Induce THEY to store a composite event which represents the strengths of two similar events. (E.g., emphasize controls on initial attempt (which, however, fails) and success of second attempt (which, however, has fewer controls) to induce THEY to remember that attempt succeeded with initial controls.)
- 8.3.1. Cause info not to be stored.
 - a. Induce belief that info is not relevant.
 - b. Induce belief that info is not useful.
 - aa. Present confusing or contradictory picture.
 - c. Overwhelm LTM capacity with new info & associations.
- 8.3.2.A. Induce storage of, reinforce, or capitalize on false or misleading info, especially with reference to THEY's knowledge structure. E.g., Lie (or create falsehood). May use repetition to reinforce the lie. "Disinformation".

NOTE 1. OBJECTIVES of lying:

- a. to commit fraud; to cover/disguise fraud;
- b. to misrepresent opposing viewpoints;
- c. to make THEY expect action when none is intended (words are cheaper than action) (procrastination).
- d. to misrepresent the value of materials (e.g., for collecting insurance when object is lost or destroyed.)
- e. to misrepresent unqualified materials (e.g., medicines).
- f. to misrepresent the significance of information.
- g. to provide a cover story for WE's deceptive actions.

NOTE 2. DEVICES & METHODS of lying:

- a. Initiate or capitalize on false or misleading statements or documents (e.g., press releases, hazard notices, reports, mail order ads, bad checks).
- b. Rumors.
- c. Information leaks, press leaks. To help prevent an info leak, keep all unnecessary parties (including WEs) uninformed, or informed only of cover story.
- d. Forgeries, counterfeits (e.g., fictitious bank transactions).
- e. Preplanned stories.

NOTE 3. It may be very difficult for THEY to correct such errors in his knowledge structure, as has been demonstrated in experiments on hoaxing, dehoaxing, and desensitizing. Once THEY is deceived (i.e., hoaxed), attempts to convince THEY of the existence and nature of the deception involved (i.e., to dehoax), and to reeducate THEY to remove the effects of the deception (i.e., to desensitize), may not be successful. This is especially true in experiments employing nested deceptions. Once THEY has been debriefed regarding part of the hoax, he may no longer behave as he would in the "real world"; and may also realize that he can't distinguish between hoaxing and dehoaxing information. Therefore, his behavior may change; and he may not trust the correct information when the experimenter is desensitizing him about false information learned during the hoax. (See also 8.8.6.2.B. & C. nested deceptions; 8.8.5.2.1.A. subsequently discredited source.)

- 8.3.2.B. Induce they to store hypothetical example as fact.
 - a. Communicate general idea via specific hypothetical example.
- 8.3.2.C. Create false results of test or experiment.
 - a. Design or implement experiment in a biased way.
 - b. Control (rig) the data.
 - c. Select only desired portions of results (see also 1.3.3.A. Oversimplification; 1.3.2.2. Subjective validation; 2.4.2. Info Selection.)
 - d. Use a misleading model.

- e. Use a misleading measure.
- 8.3.2.D. Interpret results to yield false conclusion, especially by "lying with statistics" (see also 4.4.3. Analytical Procedures).
- a. Omit an important factor (e.g., a covariable).
 - b. Overemphasize an unimportant fact so that it achieves unwarranted significance or weighting (see 1.3.2.3.).
- 8.5.A. Use "brute force" to break down memory or associations. See 1.1.A. Brainwashing. Or use subversion (e.g., 1.1.C. Hypnosis).
- 8.5.B. Take advantage of expected imperfect memory over the long term:
- a. by referring to a plausible, non-existent entity (e.g., emulate plausible, non-existent info source).
 - b. by using a series of deceptions which create an overall impression. The overall effect remembered can be much more magnificent than would be possible if THEY could remember the the individual events separately.
- 8.7.A. Hinder THEY's info retrieval:
- a. Suppress or eliminate retrieval cues.
 - b. Induce THEY to initiate retrieval of nonexistent info (that THEY believes exists).
 - c. Block recall of correct information by activating an interfering process or item.
- B. Induce THEY to recall a particular schema by raising its activation level by activating related schema.
- C. Induce they to retrieve false information.
- a. previously "known" info (e.g., common knowledge, stereotypes).
 - b. info which WE previously induced THEY to store.
- D. Interpret events for THEY to help him remember the desired (incorrect) version (e.g., a mock explanation to help THEY misinterpret an upcoming event; a recapitulation of a past event; leading interrogation of a witness.)
- 8.8.A. Capitalize on THEY's lack of knowledge (ignorance).
- 8.8.1.A. Induce or capitalize on superstitious beliefs or faulty beliefs about the unknown.
- a. Induce the (false) belief that THEY is under the control of hypnosis, or the fear that THEY can be made to act against his will through hypnotic power.

- B. Utilize or build on THEY's existing beliefs to direct his acceptance or rejection of ideas (e.g., value judgements).
 - C. Induce/capitalize on troublesome social differences.
 - D. Capitalize on common faulty assumptions and beliefs about everyday life.
- 8.8.3.A. Establish/capitalize on THEY's trust in human behavior. Especially, establish trust by familiarity or association; capitalize on trust in a known individual or peer.
- B. Establish THEY's trust in an individual for the purpose of exploiting it.
 - a. Establish an agent as one of THEY's fellow group members or subordinates.
 - C. Capitalize on THEY's failure to realize that the thought patterns of two or more persons (e.g., himself and someone else) may be surprisingly similar due to common experiences, mutual familiarity, or frequent thinking about each other.
- 8.8.5.A. Alter THEY's self-image.
- a. Especially, lower THEY's self-esteem. (E.g., see 1.1.A. brainwashing.)
 - b. Provide a desired model for THEY to believe in and as a model after which to pattern his own self image of ideals, goals, loyalties, and capabilities.
 - c. Undermine THEY's belief, confidence, and trust in THEY's basis for his values and beliefs, especially to create a vacuum to be filled by WE's ideology. Undermine THEY's acceptance of, or motivation to remain loyal to his values and beliefs (e.g., by using guilt, depression).
- 8.8.5.B. Capitalize on/affect THEY's perceptions of THEY's goals & priorities.
- 8.8.5.1. Capitalize on inaccuracies in THEY's concept of his own physical processes, e.g., idiosyncratic movements.
- 8.8.5.2.A. Capitalize on inaccuracies in THEY's concept of his own mental processes.
- 8.8.5.2.B. Capitalize on THEY's belief in the correctness and justice of his own values, biases, & prejudices (Logical Fallacy 29).
- a. in a cause (e.g., in which THEY is involved);
 - b. self-righteousness, rationalizing (e.g., something unjust); (e.g., pride and ego prevent the public

from accepting that it is so easily deceived).
(See also 1.1.1.2. Commitment; 1.1.1.5.4.
Involvement; 1.1.1.5.6. Emotion of pride).

- 8.8.5.2.1.A. Capitalize on THEY's false beliefs introduced by a subsequently discredited source (dehoaxing does not imply desensitizing: If a source is discredited, THEY can't easily invalidate info it had provided).
- B. Capitalize on inaccuracies in THEY's concept of his own knowledge base.

- 8.8.5.2.2. Capitalize on inaccuracies in THEY's concept of his own mental processes: EXEC, CONTROLLER, SENSOR, etc.

- 8.8.6.A. Induce/capitalize on inaccuracies in THEY's concept of WE's characteristics and capabilities.

- a. Make THEY believe WE possesses particular characteristics & capabilities.
 - aa. Simulate qualifications or power (e.g., capitalize on THEY's awe of a position or title).
 - bb. Make THEY believe WE possesses special information sources. (Mentalists' methods include cold reading techniques such as inducing THEY to tell WE information without realizing or remembering he has done so, and inducing THEY to fit generalities to himself (see 1.3.2.2.H.c. oddmatches).)
- b. Withhold information about WE's identity.
- c. Establish in THEY's mind early a legitimate cover for WE's activities.
- d. Make deliberate errors to imply lesser capability.
- e. Possess, unknown to THEY, particular characteristics & capabilities.
 - aa. Secretly acquire capability. (e.g., by contriving a special gimmick; or by deriving pertinent info from a complement set.). Especially, capability to discover, steal, organize, or alter information or material. (E.g., hidden miniature transmitters & sensors.) (Mentalists' methods include those for message reading, cold reading, code systems, covert employment of third parties, rapid calculation, sightless vision.)
 - bb. Induce THEY to make relevant a capability WE secretly possesses (e.g., force THEY to utilize particular information). (Methods include mentalists' techniques for forcing choices.)

cc. Utilize common characteristics or capabilities of which THEY is unaware (e.g., mnemonic techniques, "chemical magic" effects).

B. Induce/capitalize on inaccuracies in THEY's concept of WE's method of operation.

a. "Bundle of sticks" (ref: Diaconis): Induce THEY to systematically rule out all methods WE might be using by using multiple methods successively to repeat the same effect (so weaknesses in one method are covered by the others.)

8.8.6.1. Induce/capitalize on inaccuracies in THEY's concept of WE's physical characteristics and capabilities.

a. Feign WE's injury, illness, or death.

b. Feign outward appearances: attractive, likeable.

8.8.6.2.A. Induce/capitalize on inaccuracies (or ignorance) in THEY's concept (perceptions) of WE's mental processes: EXEC (motives, emotions; goals, intent, priorities; means to goals), CONTROLLER, etc.

a. Show great interest in something (see also 2.4.2.2.1.).

b. Show (pretended) relationships with people (e.g., friendship, helpfulness, cooperation).

c. Methods: by feigning personality, enthusiasm, emotions.

d. Show (pretended) agreement or support (e.g., pay lip service) (Logical Fallacy 33).

e. Withhold information about WE.

f. Put on false front (e.g., show excessive leniency to captives).

g. Induce THEY to believe WE has a different goal from the actual one, e.g., by making movements which imply it, but which also support, or at least are not incompatible with, the actual goal.
aa. e.g., "reverse psychology".

h. Fabricate a cover story to explain motives for WE's actions; use natural, expected actions.

i. Induce THEY to act by showing a faked vulnerability; feign retreat while preparing to attack (see also 8.6.6.2.A.h. & 1.8.8.2. Current Situation Image).

- B. Nest visible goal(s) within the covert goal, so as to induce THEY to perceive progress toward the covert goal as merely progress toward the visible goal(s), and thereby prevent THEY's discovery of the covert goal (see also 8.3.2.A. NOTE 3. Hoaxing).
 - C. Nest covert goal(s) within a visible goal, so as to induce THEY to perceive progress toward them as merely progress toward the visible goal, and thereby prevent THEY's discovery of the covert one(s).
 - D. Establish multiple alternative covert outcomes ("multiple outs"), all of which would appear to achieve a stated goal. Thereby induce THEY to believe, when any of the outcomes is achieved, that WE achieved the stated goal as intended in spite of THEY's efforts.
 - E. Leave THEY uncertain of WE's goals/intent:
 - a. to hinder THEY's counterdeception effort.
 - b. so WE can claim success later by switching goals, no matter how things turn out ("multiple outs").
 - aa. WE performs random process, observes result, & challenges THEY to duplicate the event.
 - bb. If an experiment shows "worse than chance" results, claim they prove the independent variable (which actually has no effect) has an effect in the opposite direction.
- 8.8.6.2.1.A. Induce/capitalize on inaccuracies in THEY's concept of WE's knowledge base (world image).
- a. Feign ignorance of a situation, identity, etc.
 - b. Search for info WE already has to imply WE doesn't have it.
- B. Induce/capitalize on inaccuracies in THEY's concept of WE's knowledge about THEY.
- a. Feign ignorance of THEY's identity.
- 8.8.7.A. Make THEY believe there is much more to know than there is.
- B. Capitalize on interia in THEY's beliefs about world when world changes (e.g. change the world).
 - C. Induce or capitalize on differences between THEY's knowledge and the true state of the world (e.g., by preparing an area in advance for later entry or observation; using (unseen) gimmicks such as microphones, tracers, indicators, lubricants).

- D. Induce/capitalize on inaccuracies in THEY's concept of the current situation.
 - a. Make deliberate errors to imply task is more difficult than it really is.

CDM Section 5. Deception EXAMPLES

EXEC EXAMPLES

1.1.B. Joshua Slocum, 1900, on a solo South Atlantic crossing, hallucinated that someone else steered the ship for him ("Savior" hallucination).

1.1.1.B.a. In Shakespeare's "As You Like It," the king finds it distasteful to examine the executed prisoner's head closely enough to detect it is not that of the prisoner he ordered beheaded.

1.1.1.B.b. A psychological experiment was done in which a student was part of what he thought to be a group study on perception. Each individual was to say which line of a set looked longest. However all of the other subjects were stooges and, in specific cases, would all choose the wrong line. It was found that the student would often choose the wrong line just to keep it from appearing that he was disagreeing with everyone else: he preferred to lie than to appear foolish.

1.1.1.3. The standard explanation for war crimes activities after WWII was, "I was just following orders".

1.1.4.B.a. If it is known that a particular code or channel is being read by the enemy then, even after a new communication method is established, deceptive messages may continue to be sent by the old method to feed false info to the enemy and to keep the enemy from looking for the new method.

1.1.4.B.b. THEY may believe he can detect a faint object beyond a bright light when in fact he can not because the sensitivity of his eyes adjusts to the light instead of to the object beyond it.

1.3.1.1.a.

1.3.1.1.b.aa. Captors reindoctrinate new POWs with the help of experienced POWs who are already partially reindoctrinated, and who now "know more than the new POWs" and can use this claim and peer pressure in converting the new POWs to the captors' viewpoints.

1.3.1.1.b. Cult organizations isolate members from the outside world and discourage free thought, particularly negative thoughts about the cult. They encourage unquestioning belief of and obedience to cult leaders.

1.3.1.1.d Snipe hunt. The victim is invited to "join" a hunt for a (nonexistent) bird or animal. His role is to wait very quietly and patiently in the brush with a bag and catch it when it is flushed out by the others. The victim ends up alone in a dark or spooky place.

1.3.1.2.A.e. Questions given in advance of a lie detector test serve to calibrate the subject's responses, rather than to help beat the test as the subject may believe.

1.3.2.1. The reduction of pain by a placebo. The creation of a false high by a nonhallucinogenic substance. In an experiment, a person expecting to be touched by hot metal developed a blister when touched by ice. An influential analyst's stock-market prediction is fulfilled when many investors act to take advantage of it.

1.3.2.2.A. Political candidates are sometimes indicted (on false or exaggerated charges) immediately before an election to sway public opinion.

1.3.2.2.B. The degree to which one is intimidated and influenced by belief in fortune telling, witches, ghosts, psychic phenomena, etc., may be reduced by treating these subjects with humor or ridicule.

1.3.2.2.E. Psychics' excuses for failure: "No genuine psychic can regularly produce phenomena upon demand" (the shyness effect--a phenomenon is adversely affected by the presence of distrust, e.g., experimental controls or the presence of careful observers, especially disbelievers or skeptical evaluators). Psychics' explanations cheating: "Psychics are compulsory cheaters and should be forgiven when caught"; "Psychics cheat some of the time because they don't want to disappoint the audience when they fail"; Consequently, a psychic must be assumed genuine unless ALL of his phenomena are proven fake. (Source: The Amazing Randi).

1.3.2.2.F.a.aa. In Poul Anderson's "When Half-Gods Go," aliens from space have such unbelievably good things to offer humanity that they must substantially reduce their claims to be believed.

1.3.2.2.G.b.bb. (INFO SELECTION) "Mistories" (Marks & Kammen's term) of popular authors Von Daeniken (Ancient Astronauts), Castaneda, Berlitz (Bermuda Triangle) supply a barrage of information, but only that which supports the author's hypothesis; they omit the rest.

1.3.2.2.H.b. (EXPECTATION) "suggestion." The journal "Science" once reported an undercover evaluation of mental health facilities in which the actions of the investigators, who were disguised as patients, were interpreted as part of their psychoses by the doctors. These actions included, for example, their inquisitiveness about the facility and their constant notetaking.

1.3.2.2.H.c. (ODDMATCHES) Personality readings by psychics seem

to fit us because they are general enough to fit many people. Their accuracy seems beyond the realm of chance; the psychic as well as the subject often being deceived in this regard. Nostradamus wrote poems which seem prophetic because they are ambiguous and capitalize on the principle of oddmatches. For any century, one can find an event which matches each verse.

1.4.1.2.2.1.B.c. Many mazes are arranged so that, after leaving the correct path near the start, one can proceed almost all the way to the goal before a barrier defeats the attempt.

1.4.1.2.2.1.1.A.a. Often advertisements will state that the buyer has only a very limited time to respond to the offer. Thus, the buyer must send in his money before he has had time to judge if he really needs the product or if he can get it at a better price.

1.6.4.1.2.A.a. Many people assume that because thunder always follows lightning that the thunder is caused by it when actually they are both caused by separate, but coordinated, processes (documentation not known).

1.6.4.1.2.A.a. A person taking prescribed medication may assume he recovers because of it, when in fact he may have recovered equally well without it.

1.6.5.A.

2.4.2.1.1.A. & D.b.

6.MSS.5.2.D.a. & D.c.

7.AA.5. An enterprising individual replaced check deposit slips in the lobby of various bank branches with his own. Regardless of what was written on them, the computer automatically deposited customers' deposits to his account. Three weeks later, before the ceiling fell in, he withdrew a newly deposited \$250,000 and left the country.

1.6.5.B.a. When a red six-of-spades is briefly presented to subjects in a psychological experiment, it is seen either as a black spade, a red heart, or, by some subjects, as a red spade.

1.6.5.C. In experiments which test individuals for ESP using the guessing of unknown cards, a few individuals may, by chance, perform much worse than chance. On observing this, a researcher may decide to perform statistical tests on these same data to determine whether the individual is "anti-psychic": i.e. has psychic ability which leads him to tend to guess the wrong cards. Such a statistical test is meaningless because: 1) the experiment was originally intended to test a different hypothesis, i.e., to test for better than normal "guessing" ability, 2) the data were selected to provide a biased sample from only selected "anti-psychic" subjects, and 3) the test for "anti-psychic"

abilities was prescribed after the fact, and because it was particularly well-suited to the patterns which occurred by chance in that particular data set. Since one could probably find some hypothesis to fit any data set generated, the analysis result is statistically meaningless.

1.6.5.E. A Southern California door-to-door magazine sales group, the "Clearing And Subscription House," offered a wide selection at excellent prices. They had checks made out using their acronym: CASH, which their customers failed to recognize as a meaningful word. Arrests were made early in 1985.

1.6.5.E.a. An artifact was inscribed "Toti e hors esto". What was it used for? Ans: To tie horses to.

1.6.7.1.a. Soft snowball showers THEY who, instead of ducking, blocks it as if were hard. Bomb designed not to detonate until defused. Drone with missiles programmed to hit whatever shoots drone down.

1.8.8.2.2. Psychics sometimes use the "one-ahead" method (claiming to be verifying one message while actually reading the next) to simulate reading of sealed messages by psychic powers.

1.8.8.2.2.1.A. Trojan horse (discard war context for peace context). In a "Mission Impossible" TV episode, a prisoner is induced to believe that he has regained consciousness in a post-holocaust world and is therefore no longer bound by his prior loyalties and reasons for keeping secrets his captors needed.

1.8.8.2.2.1.B. In a "Ghost Show," darkness, special effects, and the lack of familiar context can make one feel strange and spooky.

CONTROLLER EXAMPLES

2.3.1.A. "The horse raced past the barn fell." While reading that sentence, most people use a processing strategy which commits them to interpreting "raced" as the main verb. Hence, when they see the word "fell," they are surprised and cannot easily reinterpret the meaning as, "The horse (the one which was raced past the barn) fell".

2.3.1.B. Riddles: How many two cent stamps in a dozen? How much is 6 divided by $1/2$?

2.3.1.B.a. Riddle: Pronounce "folk". Pronounce the word for the white of an egg. Pronounce the word for the yellow of an egg.

1.8.5.

2.3.1.B.c. Math riddle: Provide data of boarding and off-loading of passengers for a bus, stop by stop. After a number of stops ask, not how many people are on the bus, but how many stops the bus made.

2.3.1.B.b.aa.

2.3.1.B.c. Riddle: "As I was going to St. Ives I met a man with 7 wives; each wife had 7 sacks; each sac had 7 cats; each cat had 7 kitts; kitts, cats, sacks, wives; how many were going to St Ives?" Ans: 1.

2.3.1.1.4.B. In the puzzle to connect 9 (3x3 matrix) dots with 4 lines, the solver falsely assumes he can not go outside the matrix boundaries.

4.4.1.1.2.2.A.

2.3.1.1.4.B. Building security guards detect an alarm or noise. On arrival at the point of the disturbance they discover a cat which obviously caused the problem. This assumption keeps the guards from looking for and finding the real intruder.

2.3.1.2.1.a. When driving to location A, which entails driving a portion of the driver's usual route home, the driver inadvertently takes the turn to his home.

2.3.1.2.1.b. Following notice of change in meeting location, driver inadvertently starts driving to its usual location.

2.3.1.2.1.c. A person returns from his morning shower to his previously arranged breakfast, only to find that the bread he had put in the toaster for later toasting is already cooked and cold.

2.4.2.1.1.A.c. To use a low-technology weapon delivery system such as a balloon, light aircraft, or sailboat which are

unexpected and seem innocuous.

2.4.2.1.1.B.a.aa. To signal one another covertly, indians sometimes used bird calls. Such signals could avoid notice because they seemed to be, or blended in with, usual background noises.

2.4.2.1.1.B.b. Preceding Normandy landings the Allies had many intermittent periods of radio silence so the radio silence preceding the actual invasion would not alert the Germans.

2.4.2.1.1.E.a.

2.4.2.1.1.E.b. The use of a simulated assassination attempt as a decoy to misdirect attention from the real assassination attempt.

2.4.2.1.1.E.b. Some members of a particular religious group believe that, in relatively few years, the earth's magnetic field will be too weak for man to survive. This belief, however, is based on overextrapolation of the current temporal pattern, ignoring the fact that the earth's magnetic field strength is cyclical.

2.4.2.1.2.a.aa. A standard tactic in mystery fiction is to give the reader so many "clues" that he can pay only a small amount of attention to each one. Since he does not know which ones are relevant, he fails to give the really important clues the attention they deserve.

2.4.2.1.2.a.aa. In "Raiders of the Lost Ark," Marion was hidden in a basket identical to many others in the marketplace; and the ark was stored in a warehouse in a crate along with thousands of similar crates. Prior to D-Day the Allies sent many fake messages along with the real ones.

2.4.2.1.4. In WWII, to prevent the Germans from discovering the true D-Day landing site, the Allies "leaked" false plans for landings at points covering most of the continent.

2.4.2.1.4. A claims approver was successful in getting required insurance company signatures on fictitious claims because he pushed them through the system during a period of high volume and high personnel turnover when individual cases were not carefully reviewed.

2.4.2.2.1.D. Scott advertised that its paper towels were heavier than its competitor's towels, implying that they, therefore, performed better.

2.4.2.2.2.a.bb. A common action in movies is for a pursued car to drive into an alley, only to reappear immediately and escape in a different direction. The pursuers, close behind, are now being led astray by a different car, the original having remained in

the alley.

2.4.2.2.3.1.1.a. Prior to D-Day (Operation Overlord) the Allies presented the Germans with information indicating many different locations for the forthcoming attack to divide their resources.

2.4.2.2.3.1.1.b. Psychic Uri Geller sometimes creates confusion verbally and with actions (The Amazing Randi has dubbed this the "Geller Tornado") in order to prevent a social group audience from closely watching his sleight-of-hand.

2.4.2.2.3.1.2. A pickpocket can use a well-timed comment or collision to hide his deed.

2.4.2.2.3.1.2.a. A guard standing watch is lured to help those in an "accident". While he does so someone sneaks past his post.

MANAGER EXAMPLES

4.4.1.1.1.1.A.c.aa. Bargaining agent sets higher price than he wants so final compromise meets his original goal.

4.4.1.1.1.1.A.d. If the Russians were to make the U.S. believe that Soviet research into ESP were paying off when in fact it was not, it might induce the U.S. to expend funds on fruitless research.

4.4.1.1.1.1.B. A gambit (sacrifice) in chess can eliminate the defense created by ones opponent and force the opponent to rebuild.

4.4.1.1.2.A.c.aa. Astrological readings are ambiguous enough to apply to most people; people unknowingly fill in specifics to fit themselves.

4.4.1.1.2.A.c.aa. "THE CAT", in which the H and the A are written in an identical, intermediate form which can be interpreted as either.

4.4.1.1.2.A.c.bb. Q: "I have two coins totaling \$.30, and one is not a quarter. What are they?" Ans: One is a nickel; the OTHER one is the quarter. Q: "One would cost 20 cents; twelve would cost 40 cents; nine-hundred and twelve would cost 60 cents. What are we buying?" Ans: Street numbers.

4.4.1.1.2.A.c.dd. A brewery advertised that they washed their bottles with live steam. Consumers falsely inferred that their competitors did not do likewise.

4.4.1.1.2.1.A.a. In E. A. Poe's "The Purloined Letter," the letter is placed in plain sight in the maildrop where it was completely overlooked.

4.4.1.1.2.1.A.b. In Agatha Christie's mystery, "The Murder of Roger Ackroyd," the murderer is the writer. Puzzle: How can one rearrange 6 coins in the form of a "t" to form two intersecting rows with an equal number coins in each? Solution (which involves an additional dimension): stack two coins at intersection.

4.4.1.1.2.1.A.c. In a role-playing game, the player was sent out to find someone (the king) who turned out to be himself. In murder mysteries, the killer often makes himself appear to be a victim to remove suspicion from himself.

4.4.1.1.2.1.A.d.

4.4.1.1.2.1.B. Puzzle: An electric train travels north at 10 m/sec; the wind is easterly at 5 m/sec; in what direction does

the smoke travel? Ans: Electric trains don't make smoke. (The smoke & the problem are imaginary; the solution is irrelevant.)

4.4.1.1.2.1.C. A person goes to bed at eleven pm and sets his alarm to wake him at noon. How many hours sleep will he get?

4.4.1.1.2.1.D.d. "Have you stopped beating your wife?" One's response may be led astray unless he realizes that the question assumes he has been beating his wife.

4.4.1.1.2.2.B. During WWII, Hitler withheld reinforcements from Normandy for days after the Allies had landed because he was convinced that the Allies were going to land at Pas de Calais, and, therefore, that this landing was a ruse.

4.4.1.1.2.3.a.aa. The ruse "look behind you!" to distract an opponent became such a cliché, particularly in fiction, that the standard response became to refuse to do so. Thus it was then possible to prevent someone from looking behind him simply by saying "look behind you!"

4.4.1.3. (Example of Abandonment of Discussion.) A psychic states: "I don't care what people think, I KNOW my powers are genuine."

4.4.1.3.1.a. The false shortcut was a standard ruse in old films and cartoons. Instead of being quicker, it took much longer.

4.4.1.3.2.2.4.A. Let THEY win small poker stakes to gain confidence.

4.4.1.3.2.2.4.A.

6.MSS.5.2.D.c.bb. In a pyramid scheme, or a "Ponzi" scheme, early investors receive a handsome return on their investment. Instead of being derived from company profits, however, this money is actually that being contributed by later investors. In reality, there are no profits. But the return to previous investors encourages more and more people to invest, and the company may grow very large and appear very prosperous before its ultimate collapse.

4.4.1.3.2.2.4.C.a. In Isaac Asimov's "Second Foundation," the organization called "the second foundation" allows a large number of their people to be discovered and eliminated so that the rest of the galaxy, who wanted to be free of them, would presume them destroyed. Thus, the organization could continue its operations.

4.4.1.3.2.2.4.C.d.

6.MSS.5.2.D. WE allows THEY to discover (innocuous) camouflaged "trucks" which are actually artillery.

4.4.1.3.2.2.8.A. Experimenter provides subject with false biofeedback (e.g., heartrate) to influence male subject's attraction to females in pictures. Effects were not removed by debriefing.

4.4.1.3.2.3.A.b. Fake military maneuvers may include dummy radio messages, sound effects, etc.

4.4.2.B.a. Clothing may become unusable for its original purpose while still practically new due to changes in fashion. Mechanical parts may be designed to fail after limited use.

4.4.2.1.1.a. Fallacy: One is either knowledgeable or ignorant. (In fact, one may be knowledgeable about some topics and ignorant about others.)

4.4.2.3.a.aa. Many things sold today have planned obsolescence: e.g., even though the item may be just as good now as when it was new, we are made to believe it is worth much less just because it is old or out of style.

4.4.2.3.1.1. Levi's ads constantly emphasize how long Levi's pants have existed, trying to make them appear to be an American tradition.

4.4.2.3.2.A. You win if this ear of corn has an odd number of rows of kernels; Otherwise, I win; O.K.? (Result is always even.)

4.4.2.3.2.B. In a western saloon, a miner openly sells his confederate a gold brick at a ridiculously low price. Others, skeptical, tease the confederate who proves the gold brick is indeed genuine. When the miner keeps his promise to return with many more (fakes), he sells them all.

4.4.2.3.2.C. The mother arctic fox uses her danger warning cry to make her cubs drop meat she wants to eat.

4.4.2.3.2.C.

2.4.2.1.1.A.b.bb. The little shepherd boy cried "wolf" so often that when the wolf really did show up no one believed him.

4.4.2.4.2. Tom Sawyer made it look like it was so much fun that he induced others to pay him to whitewash his fence for him.

4.4.2.4.2.2.A. Disguise as THEY's high ranking officer. Demand entry saying if THEY's guard delays you, he will be in "big trouble".

4.4.3.5.c. Uri Geller routinely amazes his audiences by discerning figures sketched by a spectator. In one such case, he

uses the knowledge that, when asked to draw a simple geometrical shape, a high percentage of people will draw a triangle. People are generally unaware of this fact.

4.4.3.5.e. Fallacy according to Roosevelt's new deal policy: If the individual must spend within his budget, so must the federal government.

4.4.3.5.f. "Women are weaker than men" is true on the average, but not true for many specific cases.

4.4.3.5.f.aa. The belief that an individual is entitled to a refund from the insurance company because he (as an individual) has a good claims record.

4.4.3.5.D. (Logical Fallacy #37.) In roulette, gamblers may incorrectly assume that after a run of black the ball is more likely to come up red.

4.4.3.5.2.1.A. A psychic on the radio told listeners that if they concentrated along with him they would create unusual effects around their houses such as stopping clocks, starting broken watches, and bending keys. Many called in to verify that such effects were indeed occurring. Subsequently it was revealed that the man was not a psychic, but was demonstrating how psychics can take credit for causing amazing effects by taking advantage of peoples' common failure to notice everyday occurrences.

4.4.3.8.A. In a Pyramid scheme (e.g., a chain letter), the number of people required increases geometrically as the scheme progresses, so that the victim fails to be paid off because there are too few people in the "world" to accommodate the scheme. The victim may also be misled as to the probability of each individual perpetuating the scheme.

SENSOR EXAMPLES

6.0.B. Anti-aircraft fire to keep enemy spotter planes high and deny them close observation. A magician controls where his audience sits.

6.MSS.1.1. During WWII POW camp escapes, prisoners would avoid detection by moving only when the search lights were directed away from them, taking cover when the sweeps covered their area.

6.MSS.1.2.1.B.b. Optical illusions caused by fatigue (e.g., at the retinal level) include Mach bands; Hermann grid; complementary color after images (selective fatigue); halos.

6.MSS.1.2.1.B.c. In the dark, an individual standing in front of a bright light can be seen only as a silhouette, and can not be identified.

6.MSS.1.2.2.a. WWII Allied bombers dropped foil (chaff) to "fog" enemy radar and keep them from obtaining an accurate fix.

4.4.1.1.2.2.A.

6.MSS.1.3.a. In the space game Empire, in which spaceships can be made invisible, each player has a device to warn him when an enemy is within a certain range. But an invisible ship can still approach unnoticed if a visible ship also approaches at the same time and triggers the warning device first.

6.MSS.1.4.2. In playing the child's game "Duck- duck- goose" under a strobe light, a runner's visual feedback is periodically delayed, inducing him to run wildly off course.

6.MSS.5.2.A. Visual illusions: (1) Two parallel lines with an intersecting diagonal, the piece of the diagonal between the two parallel lines being removed from view. The remaining two parts of the diagonal appear offset. (2) Lines radiating from a point distort size of nearby squares (due to perspective effect). When two equal line segments form an inverted "T," the vertical one appears longer. An example of ambiguous perspective is the Necker Cube illusion, in which an outline drawing of a cube (or even a cube made of wire) can be seen as viewed from either of two positions. In one optical illusion, one stares at a fuzzy yellow ring on a crosshatch background until the ring vanishes due to retinal fatigue; in its place, instead of a void, one sees (literally) the cross hatch pattern which fills in the space where one formerly saw the ring.

6.MSS.5.2.A.a. The "giant" actor illusion induced by using small furniture.

- 6.MSS.5.2.A.c. The "boom-squish" illusion, in which a circle has radiating lines alternately inside and outside.
- 6.MSS.5.2.C.a. Tigers' stripes and leopards' spots serve to break up their visual form, making them hard to detect in grass or brush.
- 6.MSS.5.2.C.b. The praying mantis blends with leaves; the walking stick with branches.
- 6.MSS.5.2.D.a.aa. A popular ruse is to impersonate a delivery man or repair man to move about an area unnoticed or to gain access to a house.
- 6.MSS.5.2.D. Dummy inflatable equipment, dummy roads. Fake tank tracks. Camels to stir up dust clouds simulating vehicles.
- 6.MSS.5.2.D. A carnivorous female firefly immitates the mating attraction light pattern of females of other species of fireflies.
- 6.MSS.5.2.D.c.aa. During the Battle of Britain, the British constructed fake airdromes near the real ones and blacked them out just after they had been spotted by German bombers. After the first bombing wave, fires were set to simulate damage and provide markers for the second wave of bombers.
- 6.111.7.A. Color reversal after-image illusions are induced by selectively fatiguing visual receptors with the complementary color.
- 6.MSS.7.C. Optical illusions caused by a shift in reference conditions include apparent reverse motion after stopping.
- 6.MSS.7.D. Murderer establishes alibi by resetting clocks while his witness is asleep.

AFFECTOR EXAMPLES

7.AA.1.3. Dummy ships full of balsa wood were used as decoys to induce submarines to attack, waste torpedos in continued attempts to sink them, and remain long enough to be targeted themselves.

7.AA.5.1. An (illegal) scheme for "borrowing" money is to cash a check on an empty account, covering it before the check clears by a check on a second empty account, and so on, and on, and on....

7.AA.7.A.a. Push your arms outward very hard against door jam for one minute. Then let them relax at your side. Although they will feel like they are remaining at your sides, they will begin to float up without conscious effort.

7.AA.7.B. Delayed auditory feedback of one's own speech makes one stutter.

LTM EXAMPLES

8.1.9.b. Dr. Watson often makes disparaging remarks about Sherlock Holmes' speculations, conning the reader into discounting them.

8.1.9.3.IS.c. Scientists occasionally succeed in publishing fraudulent experimental results. One reason is that other scientists apparently are unable to believe that another in their profession would do such a thing and, therefore, do not look for fraud.

8.1.9.3.IO.b. In a trick called a "hidden exhibition," a spy places leads in his residence which, when tracked down by an investigating agent, confirm the spy's false identity. The agent finds such evidence very convincing because of the effort necessary to find it and because looking for it was his own idea.

8.1.9.3.SO.c. Before D-Day, commando groups that were sent out were often given false information about Allied invasion plans so that, if captured, they would pass it on to the Germans. Troops to be sent to North Africa were given mosquito netting and lectures on tropical diseases to convince them, and thus enemy spies, that they were to be sent to the tropics instead.

8.1.9.3.SO.d. See GAS STATION CON plot.

8.1.9.3.SO.e.aa. In an intelligence operation, an agent was planted in a class being taken by a Russian spy. Long after the class ended, the agent deliberately met the Russian "by chance." Subsequently, the agent was recruited into the Russian organization where he was able to obtain info on Russian agents.

8.1.9.3.SO.g.aa. A business agent drops money on the ground to attract a crowd to where his client is. He then makes sure that those who are considering hiring his client see the crowd and believe that it was attracted merely by his client's presence.

8.1.9.3.SO.g.bb. Planting a "mole" in an adversary's organization is common espionage practice. Moles may work for the adversary for many years before being utilized in a vital espionage role.

8.1.9.4.IS.a.

Visitor: Do you pronounce it "Ha - why - ee" or "Ha - vhy - ee"?

Native: "Ha - vhy - ee"

Visitor: Thank you.

Native: You're velcome.

8.3.A.b. In East German cities just after WWII, the army would drive trucks through the main streets, and then return to base,

change the trucks' serial numbers, and drive through the streets again. Spys would see the trucks and report back that the Army had more equipment than it actually did.

8.3.A.b. Coin bobbing, attaching a thread to a coin to retrieve it, was once used to deceive vending machines.

8.3.A.c. Just before the PSA airliner collision in San Diego, the air traffic controllers warned the pilot about a close flying small plane. The pilot said he saw it and was avoiding it. Newspaper reports suggested the plane he saw was a different one, however. The jet collided with the plane the controller had reported to the pilot.

8.3.B.b.cc. Two jokes in a series of unrelated elephant jokes.
Q: Why do elephants paint their toenails pink? (I don't know.)
A: To hide in strawberry patches.
Q: Have you ever seen an elephant in a strawberry patch? (No.)
A: Effective isn't it? (One automatically discards the context of the first joke before listening to the next.)

8.3.B.b.dd. Von Daniken, in Chariots of the Gods, relates his brief visit to a famous Russian scientist, who is noncommittal on the issues, and then his visit to a Russian writer, who is very opinionated. By the end of the chapter, the reader remembers the opinions as belonging to the scientist rather than to the writer.

8.8.7.D.a.

8.3.B.c. Psychics sometimes perform a magnificent mind reading effect with much showmanship, only to have it fail. In the heightened suspense which follows, he makes a brief second attempt which succeeds. After the performance, most of the audience remembers only that he succeeded under the stringent conditions of his first attempt.

8.3.1.a. In many Agatha Christie mysteries some of the most important clues given by the detective are disguised as offhand comments with a second, completely different, meaning. Other characters reinforce the readers erroneous interpretation of these misleading comments by making the same mistake and responding accordingly.

8.3.2.A. A scheme for defrauding an insurance company is to over-insure, and then wreck, a nearly worthless car.

8.3.2.A. In a Father Brown mystery, reader doesn't suspect suicide because of the victim's cheerful front. In Ellery Queen mysteries, characters reinforce by repetition a pivotal "fact" which turns out to be false.

8.3.2.A. (and)

8.1.9.3.SO.b. & d. (and)

8.8.3.A. A scientist published fabricated experimental results under the authority of his unsuspecting superior who was highly respected in the field. He used his friends' goodwill to pass the peer review process, and capitalized on the unwillingness of scientists to believe other scientists would do such a thing.

8.3.2.B. At an official party, the vague statement "Someone like the Secretary of State said the U.S. might" became "The Secretary of State said" (Official policy), after transmission through several parties to a foreign representative.

8.3.2.D. When quoting divorce rate, failing to restrict the set to first-time marriages.

8.3.2.D.b. Advertiser stresses features of product which are in fact no different from those of other products.

8.5.B.a. A practical joker sent Christmas cards to acquaintances under false names, pretending to have known them in the past and announcing he would visit them soon.

8.7.A.c. When trying to recall a familiar tune or name, the thought of a similar one can block recall.

8.8.A. Many individuals have tried to sell "perpetual motion machines" which run forever without additional energy input. Such salesmen capitalize on, among other things, people's ignorance of the physics which makes such devices impossible.

8.8.5.A.a. Religions and imaginary or exaggerated folk heroes help shape people's self-image, especially with regard to goals, capabilities, and loyalties.

8.8.5.1. Idiosyncratic movements, controlled by the subconscious, can cause a pendulum suspended from the hand to swing in a line or a circle to answer yes/no questions.

8.8.5.1. In J.R.R. Tolkien's "The Lord of the Rings," the advisor Grimer achieves control over the Kingdom of Rohan by convincing the King that he had been affected by age much more than he actually had, and that he must, therefore, severely restrict his activity and let Grimer handle matters for him.

8.8.5.2.1.A. In an experiment, a magician was presented to an audience either as a stage magician or as a genuine psychic. He then performed magic tricks which could be interpreted as proof of genuine psychic powers. It was found, even after a debriefing in which it was emphasized that he did not have such powers, that a majority of each audience remained convinced that he did.

8.8.6.A. Suitors may feign wealth. Uri Geller claims to have genuine psychic powers.

8.8.6.A.c. (and)

4.4.1.1.2.1.A.c.aa. Shopper shoplifts and then requests a refund for the product. If he fails to get it, he takes the product and leaves.

8.8.6.A.d.

8.8.7.D.a. A psychic may make deliberate errors or have deliberate failures to heighten the effect when he succeeds.

8.8.6.2.A.g. Head fakes, or fake hand-offs in football.

8.8.6.2.A.i. When a predator nears a quail's nest, the mother quail will pull it away from the nest by acting as if she were injured. The predator pursues the "injured" bird, a seemingly easy prey, and is thus prevented from discovering the nest.

8.8.6.2.C. In Asimov's "Foundation's Edge," two men are looking for the planet Earth. The first is looking for it because of its historic importance. The second, however, wants only to locate a particular organization without arousing its suspicions, and is using the search of the first as a cover while he checks out his primary search area, Earth.

8.8.6.2.D. On a TV show, a magician on the phone had Columbo select a number from 1 to 4. He then directed him to a note hidden under a lamp in which he had correctly predicted the number. Had Columbo selected a different number, the magician would have directed him to a different note.

8.8.6.2.E.b.bb. Some experimenters have erroneously claimed that an experiment showing fewer ESP hits than expected by chance demonstrates involuntary, counterproductive psychic powers.

8.8.6.2.1.A.a.

8.8.6.2.1.B.b. In the play "Mayday", WE (disguised as chimney sweep) feigns ignorance of THEY's identity, and insults THEY to arouse and direct THEY's anger to WE's ends.

8.8.6.2.1.B. WE sends a misleading message in a code that he knows THEY has cracked. THEY assumes that WE doesn't know the code has been cracked, and therefore accepts the message as true.

8.8.7.C. Bugging a room.

8.8.7.D. In a mail fraud scheme, one mails out a large number of predictions of an event with two possible outcomes. Half predict one result, half the other. Following the event, predictions are

made for another event, but are sent only to those for whom the first prediction was correct. This pattern is repeated until a relatively small number of very-convinced potential victims remain for the next phase of the scam.

CDM Section 6. Deception PLOTS.

PLOTS

1. TIN SIN KUK. Chinese con game. DECEPTION STORY: THEY to help teach habitual gambler (WE#2) the error of his ways. PLOT STRUCTURE: WE#1 to teach THEY how to cheat at game of chance (at THEY's own risk). WE manipulates things so THEY has initial success, but eventually loses big stakes. WE convinces THEY that THEY "blew it" by "finding" evidence (e.g., a game tile in THEY's cuff). WE thus induces THEY to try again and lose even more. WE#3 then tells THEY he has been cheated, and says he may be able to help THEY recover part of his losses if he doesn't go to the police (its not cost-effective for THEY, & THEY is also at risk because of his illegal cheating). THEY, confused, recovers about 10 percent of his losses only after long, hard negotiations which leave him feeling lucky to have done even this well.

- 1.1.1.A. manipulate motivation (by greed, humanitarianism, guilt).
- 1.6.7.2. teach THEY something WE can exploit.
- 2.4.2.2.3.1.1.b. confusion.
- 2.4.2.2.3.1.1.c. flustering.
- 4.4.1.3.2.4.A. demonstrate initial success.
- 4.4.1.1.2.2.A. alternative explanation for loss.
- 4.4.2.C. manipulate THEY's perceived payoff matrix.
- 4.4.2.2.1. make him work hard for partial recovery.
- 8.3.2.A. planted false evidence.
- 8.8.6.2.A.b. & d. gain confidence by pretending to be on THEY's side.

2. MARKETING OPPORTUNITY CON. DECEPTION STORY: For low initial investment (fees, rent, license, etc.), THEY can participate in the marketing opportunity, and profit just by bringing in a few new members. PLOT STRUCTURE (Advertising): THEY is convinced to join for easy profit opportunity. He is simply to get others to join, who continue the pyramid by getting still more new members. Motivational meetings include testimonials by well-known individuals & authority figures on how easy profit is, how good product is, & how well product will sell. Success is demonstrated by awarding small real profits & some faked large profits. Scheme fails because the world cannot supply the huge supply of suitable new members required.

- 1.1.1.A. motivation (greed).
- 4.4.1.3.2.2.4.A. demonstrate initial success.
- 4.4.3.5.2. Intuitive estimation, pyramid scheme.
- 8.1.9.3.S0.b. induce belief by well-known individuals & authority figs., even though unequal or only tenuously assoc.
- 8.8.3.B. take advantage of personal relationships.

3. MUNASSIB (from the WWII Battle of El Alamein). DECEPTION
STORY: Real attack is to be on south. PLOT STRUCTURE: Real
attack to be on north. Set up fake artillery on south. Let THEY
discover it is fake. At night, just before real attack,
substitute some real artillery for fake. Next day, prior to real
attack on north, make diversionary attack on south with this
artillery. Thereby induce THEY to believe that this is the real
attack: THEY now believes that they were allowed to discover
that the original artillery was fake in order to convince them
that the attack would be in the north; and that they have seen
through this deception. This keeps THEY's troops committed to
south until too late for them to oppose attack on north.

- 1.6.1.1.A.a. continuity (temporal).
- 2.4.2.1.b. feed info WE wants THEY to appreciate.
- 2.4.2.2.1.B.b. Diversion.
- 2.4.2.2.2.a.bb. & 6.MSS.5.2.E. substitution.
- 4.4.1.3.2.2.4.C.d. Convince THEY they have seen thru the
deception (twice).
- 6.MSS.1.2.1.A. Sensory limits: darkness.
- 6.MSS.5.2.d. Fake & decoy.
- 7.AA.5. & 8.8.6.2.A.g. feint; affector response time.

4. MELTING POT (from the WWII Battle of El Alamein). DECEPTION
STORY: Real attack is to be on south. PLOT STRUCTURE: Real
attack is to be on north. When observed (by day) move tanks to
south. When not observed (at night) replace them with fakes (in
exact positions) and move real tanks to north and camouflage them
as (innocuous) trucks. This keeps THEY's troops committed to
south until too late for them to oppose attack on north.

- 1.6.1.1.A.a. continuity (temporal).
- 2.4.2.1.b. feed info WE wants THEY to appreciate.
- 2.4.2.2.2.a.bb. & 6.MSS.5.2.E. substitution.
- 6.MSS.5.2.D. Decoys/fakes.
- 7.AA.5. & 8.8.6.2.A.g. feint; affector response time.

5. ISRAELI PATROL BOAT TACTIC (Yom Kippur war of 1973).

DECEPTION STORY: Five WE (Israeli) vessels are visible straight ahead on the radar & can be targeted by four THEY (Syrian) vessels. PLOT STRUCTURE: WE's and THEY's missile-carrying FPB's approach head-on. THEY's missiles have longer range & larger warheads than WE's. As soon as WE detects THEY's FPB's, WE fires long range chaff rockets toward them. THEY believes these decoys are WE's vessels and wastes several missiles on them. WE also counters THEY's missiles with deceptive ECM, gunfire, short range chaff rockets to provide close in decoys. When within range, WE fires own missiles at THEY's vessels. (Results: 3 Syrian FPB's sunk, & one beached; no Israeli losses.)

1.6.5.D. fit pattern expected.

6.MSS.1.1. sensor limits (avoid sensor area and detection).

6.MSS.1.4. sensor limits (discriminability of FPBs from chaff on radar).

7.AA.1.3. induce THEY to expend limited affector resource (missiles).

6. GAS STATION CON. DECEPTION STORY: PLOT STRUCTURE: WE#1 fills up at gas station. He tells attendant (THEY) he has lost his valuable ring, which he describes. He offers big reward & leaves (fake) hotel address with THEY. Soon thereafter, WE#2 fills up & "finds" ring, but says he can't detour to return it. He offers to split reward with THEY if THEY returns it for him. WE#2 gives THEY (worthless) ring. THEY gives WE#2 half of reward money. WE#2 leaves; THEY can't find WE#1 to collect reward.

1.1.1.A. manipulate motivation (by greed, humanitarianism).

1.8.8.2.2.1. set up false context.

4.4.1.1.2.2.A. alternative hypotheses ("can't detour").

4.4.2.c. misrepresent payoff matrix values.

8.1.9.3.10.b. collaboration of apparently indep sources of info.

8.3.2.A. lie, establish false LTM info.

7. JEWEL CON #1. DECEPTION STORY: --. PLOT STRUCTURE: WE#1 buys rare jewel from THEY & offers much higher price for identical second one. THEY searches & negotiates purchase of identical second one (actually same one) from WE#2 at even higher price. WE#1 rejects THEY's price for second jewel. THEY ends up with his original jewel, but is out the difference in the two prices.

1.1.1.A. manipulate motivation (by greed).

- (?) -. make achievement realistically difficult so as not to arouse suspicion.

4.4.2.c. misrepresent payoff matrix values.

8.3.A.b. think 2 exist when only one does.

8.1.9.3.SO.d. make collaborating sources appear independent.

8. JEWEL CON #2. DECEPTION STORY: PLOT STRUCTURE: (Financially poor) WE offers girl (THEY#1) expensive jewel necklace from store on Friday PM. Clerk (THEY #2) refuses to sell necklace then because check wouldn't clear bank until Monday. WE has necklace wrapped & leaves it and check with clerk until Monday. Over the weekend, girl believes WE is rich & likes her enough to buy necklace for her. On Monday, clerk finds check bounced.

1.6.7.3.1.1. Timing: buy time by capitalizing on known delaying situation.

7.AA.5.1.a. Make preparatory action to indicate intent (feint).

8.3.2.A. lie.

8.3.2.A. Note 2. bad check: false documentation; invalid or counterfeit certificate.

8.8.6. & 8.8.6.2. false capability & intent.

8.8.7.D. create false situation.

9. PIGEON DROP. DECEPTION STORY: PLOT STRUCTURE: WE#1 starts conversation with THEY. WE#2 brings valuable "found" package, & expresses desire to share. WE#1 suggests need to leave it with "higher authority" (bank, boss, etc.). To share in proceeds, THEY must put up money to show good faith. When money is turned over to WE, WE sends THEY on wild-goose chase to pick up THEY's share. Exit WES with money.

1.1.1.A. manipulate motivation (by greed).

4.1.1.2.1.A.a. violate THEY's assumption that what is trying to avoid him (indications of bad faith) will remain out of his sight.

4.4.1.1.2.1.A.c.aa. Induce trust by challenging THEY on the same point WE is using deceptively (to put up good faith money).

8.1.9.3.IS.b. & SO.d. collaborating, "independent" info sources.

8.8.3.B.a. establish an agent as one of THEY's fellow group members.

10. FALSE CHECKPOINT. DECEPTION STORY: PLOT STRUCTURE: WE wants to discover THEY#1's checkpoint codeword. WE establishes fake checkpoint with WE personnel. WE challenges THEY#2 before THEY#2 reaches real checkpoint(s), and thereby learns codeword.

1.6.5.D. expectation (to be challenged).

1.8.8.2.2.1.A. induce desired action by creating incorrect context.

4.4.1.1.1.1.A. induce THEY to establish a new subgoal.

4.4.1.1.2.1.A.c.aa. Induce trust by challenging THEY on the same point WE is using deceptively.

4.1.1.2.1.A.a. violate THEY's assumption that what is trying

to avoid him will remain out of his sight.
6.MSS.5.2.D. simulation & disguise.

11. MOCK DUEL. DECEPTION STORY: (complex fiction). PLOT STRUCTURE: WE arranges a "pretend" public duel between THEY#1 and THEY#2. WE covertly instructs THEY#1 to actually stab THEY#2 in the leg, and covertly gives THEY#2 a sleeping potion simulating death. THEY#1 is arrested for murder by the authorities (THEY#3), but is rescued at trial by production of healthy THEY#2 by WE. (Source: The Puritan, a play discussed in Deception in Elizabethan Comedy).

1.3.1.2.B.a. trust induced by THEY being "in on it".
1.6.7. orchestration of actions.
6.MSS.5.2.D. simulation of death.
6.MSS.5.2.D. simulated event or action.
8.8.6.2.C. nested deceptions.

12. OPERATION MINCEMEAT (from WWII). DECEPTION STORY: WE's forces to land on island of Sardinia. PLOT STRUCTURE: WE (Allies) to divert THEY's (German) attention from real landing area by having THEY "discover" false plans via third party (THIRD; Spanish). WE dresses body of a man, who drowned in ocean, as a Major and handcuffs to briefcase containing faked plans for invasion of Sardinia. Briefcase includes: (1) various personal correspondence; (2) a letter bearing chief-of-staff's signature indicating Major is specialist (to explain why man of his rank is carrying plans); and (3) orders for passage on ship to depart England for Mediterranean several days before body to be found. Body then dumped from sub so as to drift ashore on THIRD's coast. Urgent requests sent to THIRD's government for return of body with briefcase unopened. Body buried with full military honors when returned. THEY, greatly interested, was able to obtain briefcase materials from THIRD.

1.3.2.2.F.a. keeping within bounds THEY think plausible.
2.4.2.2.1.B.b. diversion.
4.4.1.3.2.3.A. details implemented to support investigation of the smallest details of the deception.
6.MSS.5.2.D. disguise.
8.1.9.3.10.c. make THEY think he is getting info against WE's will.
8.3.2.A. Note 2. forged documents.
8.8.6.2.A.a. imply value by showing interest.

13. THREE CARD MONTE. DECEPTION STORY: --. PLOT STRUCTURE: THEY observes young men (WE#1 and WE#2) playing three card monte with a "feeble" old man (WE#3). Game involves youths guessing which of three overturned cards is red one (shell game variant). THEY observes that, unnoticed by WE#3, red card has bent corner so WE#1 & WE#2 never lose. THEY, confident of duplicating the successes of the youths, enters the game and bets a large amount of money (possibly after some successful smaller bets). But when bent card is turned over it is black (!) and THEY loses.

1.1.1.A. manipulate motivation (by greed).

1.3.1.2.A.c. seemingly chance meeting: THEY feels in control & initiates contact.

1.3.1.2.B. THEY believes he is "in on the trick", & can use it to win money.

4.4.1.3.2.2.4.A. demonstrate initial success.

4.4.1.3.2.2.4.C.d. THEY believes he has already seen thru the deception.

14. CON CON. DECEPTION STORY: --. PLOT STRUCTURE: WE#1 disrupts THEY (a confidence man)'s deal with a prospective partner (third party: THIRD). Meanwhile, WE#2 convinces THIRD that a certain businessman (WE#3) is involved in illegal activities, and THIRD relays this info back to THEY. THEY is allowed to see through a (minor) con which WE is apparently pulling on him and THIRD, but is convinced that the info on WE#3 is true after checking it out (informant bribed by WE). THEY attempts to blackmail WE#3, who offers to sell THEY stock at a fraction of worth. WE#3 sells THEY phoney stock (the major con).

1.1.1.A. manipulate motivation (by greed).

1.3.1.2.A.c. THEY thinks he is initiator and is in control.

4.4.1.3.2.2.4.C.d. THEY believes he has already seen thru the deception.

8.1.9.3.IS.b. Info through apparently independent source.

8.1.9.3.SO.c. Relay of info (rumor) to third party.

8.3.2.A. Note 2. forgery; faked goods.

8.8.6.2.A.i. induce THEY to act (blackmail attempt) by showing faked vulnerability.

15. FURNACE FRAUD. DECEPTION STORY: PLOT STRUCTURE: WE#1 visits THEY's household and offers to have furnace cleaned for low price. WE#2 arrives later to clean furnace and finds it to be "unsafe" and that a new one is needed. WE#1 returns and offers what is described as a good deal on a new furnace. Victim pays several times price should have.

- 1.1.1.A. manipulate motivation (by greed).
- 1.1.3.B. fear.
- 1.4.1.2.2.1.1.A.a. don't allow time to research options.
- 4.4.2.C.a. get initial commitment before modifying payoff matrix.
- 4.4.2.C.b. claimed emergency; threat of loss; payoff matrix declaration.
- 8.1.9.3.S0.b. apparent authority.
- 8.8.A. ignorance.

16. SCIENCE FRAUD DECEPTION STORY: --. PLOT STRUCTURE: Scientist fakes experimental results to confirm own hypothesis, and publishes them in journal. He works under a very respected leader in the field, and knows individuals who are to conduct peer review. Other scientists are reluctant to admit that this sort of thing goes on except in very isolated cases and so do not look hard for it.

- 1.1.1.A. friends doing review; social motivation.
- 8.1.9.3.S0.b. respected authority figure.
- 8.8.2.A. Note 2. faked results; false documentation.
- 8.8.3.A. reluctance to admit fraud exists; preconceptions.

17. HIGH PRESSURE HOME SALES. DECEPTION STORY: --. PLOT STRUCTURE: WE introduces himself via phone calls and makes an appointment to provide a free home inspection service. He presents credentials, technical data, and showmanship which establish him as an "authority". His inspection reveals certain "needs" which he can fulfill. He provides information to THEY in the form of a contract. To initiate it, THEY needs only to sign. It is a one-time offer, invalid once WE leaves. Supply is limited, price will increase, or loss will result if THEY refuses offer now. Should THEY refuse, WE becomes personally upset. After sales presentation, WE may pressure for downpayment and disappear with money.

- 1.1.1.A. social/emotional.
- 4.4.2.C. claiming deficiencies (payoff matrix).
- 4.4.2.C.c. limited time (payoff matrix changes).
- 8.1.9.3.C.b. apparent authority.

18. ULTRA COVER. DECEPTION STORY: STRUCTURE: Ultra device was covertly being used to discover Rommel's supply ship schedules, and thus sink the ships. To avoid revealing Ultra's use, every time a ship was to be intercepted by the navy it was first "discovered" by an RAF patrol plane. On the one occasion that sending a plane was impossible, a message was sent to a mythical agent in Naples (in cypher Germans would be able to read) thanking the agent for the info and granting him a raise in pay.

1.1.3.2. take advantage of enemy fear of traitors.

4.4.1.1.2.2.A. give alternative explanation.

4.4.1.1.2.2.A.a. Provide alternative source.

19. GRAF SPEE. DECEPTION STORY: STRUCTURE: Graf Spee sheltered in neutral port. British had to keep her there until reinforcements arrived. So British diplomatic staff kept up pressure for Graf Spee's expulsion while the one British ship in sight kept up messages to imaginary comrades. Gossip spread of arrival of Ark Royal and Renown; the Ambassador mentioned their arrival in passing and easily cracked coded messages sent to them. The captain of the Graf Spee scuttled his ship.

6.MSS.5.2.D.c. simulate important object.

8.1.9.3.IS.B. apparently separate sources.

8.1.9.3.IO.c. seemingly getting it against own will by own efforts.

8.3.2.A. phoney radio signals to imaginary recipient; gossip, rumor.

8.8.6.2.A.g. reverse psychology - Make THEY believe WE wants THEY's ship out of port immediately.

20. CHANNEL RUN. DECEPTION STORY: STRUCTURE: Germans had to get raiders out of Brest and back through English Channel to home ports. If the British were ready this would be suicide. A complex plan of mine sweeping was designed to clear the entire route without an apparent increase in activity. Germans let French spies see supplies for a tropical climate being put on board. Instead of leaving in daylight for a night run, ships left at night with cover story that they were going on exercises. French authorities were instructed to have target-towing ships ready and have tugs ready for return next day. Many senior fleet officers accepted invitations to a party near the port the next day and most of the crews were convinced that they would be back the next day.

2.4.2.1.1.D.b. apparently normal activity (minesweepers).

4.4.1.3.2.4.B. making run during day is unexpected.

8.1.9.3.SO.C. even crew not know.

8.3.2. Note 2. intense, misdirecting preparations.

21. MINE FIELDS. DECEPTION STORY: STRUCTURE: British wanted to restrict movement of new German submarines. They convinced the Germans that there were minefields in vast area where none existed. Every time a German sub was destroyed within the specified areas they would send this info to a double agent who reported that Royal Navy reports indicated the sub was destroyed and by a mine. When no further messages recieved from these ships it seemed to confirm this info.

4.4.1.3.2.2.8.B. apparently confirming feedback.

8.1.9.3.IS.a. partially true info.

8.1.9.3.SO.g.bb. trust: double agent.

22. EL ALAMEIN. DECEPTION STORY: STRUCTURE: The British were attacking along the northern sector of El Alamein. As a diversion they staged a fake landing along the coast. Artillery, warships and bombers bombarded the coast. Motor Torpedo Boats (MTBs) moved in and laid down a smoke screen so nothing at sea was visible from the shore. The MTBs carried recordings of invasion sounds and broadcast over large speakers. Flares were fired into the air by automatic devices. The smell of engines was emitted from cannisters on rafts floating off shore. (This ruse managed to divert an important segment of troops away from the main battle.)

2.4.2.2.1.E. diversion.

6.MSS.1.2.2. obscuring sensors.

6.MSS.5.2.D.c. & 2.4.2.2.a. simulation (unexpectedly good).

23. PEARL HARBOR. DECEPTION STORY: STRUCTURE: The knowledge of the plan to attack the harbor was restricted to only a small number of top officers, even the published campaign plans only included those operations in the Southern Pacific. No special emphasis was placed on getting info about Pearl Harbor. The Foreign Service was not informed and negotiations for a peaceful settlement continued up until the attack. A liner was even dispatched to evacuate Japanese nationals from the U.S. which would not arrive until after the attack.

Ships of the task force outfitted for both winter and tropical weather to obscure their objective. The ships left at staggered intervals and met at a secret rendezvous. Meanwhile, sailors at liberty at home were used to convey image that ships had not left. The remaining ships increased radio traffic to compensate and were even given the operators usually assigned to the task force so that the pattern of signals would be what was expected. Complete radio silence was maintained on the taskforce.

The attack took place on a weekend when the most troops would be on liberty.

2.4.2.1. taking advantage of low attentiveness.

2.4.2.1.1.D.b. make events seem normal (keep recognized pattern).

2.4.2.2. misdirection.

6.MSS.5.2.D.c.aa. simulation of important object elsewhere.

8.1.9.3.IS.a. provide what THEY expects to observe.

8.1.9.3.SO.C. restrict knowledge of the deception.

CDM Section 7.

NAVAL TACTICAL OBJECTIVES

TACTICAL OBJECTIVES

A. DEFENSIVE: WE needs to avoid being seen.

1. Break target.
2. Break trail.
3. Covert choke-point transit.
 - a. Covertly approaching a target is a special case in which the attacker defines the choke point.
4. Covert open-ocean transit.
 - a. May need to conceal operations, group composition, or assault or supply support intentions.
5. Covert sortie (getting underway & leaving port).

B. OFFENSIVE: WE needs to keep THEY in view.

1. Maintain target.
2. Maintain trail.
3. Observe choke-point transit.
 - a. Observe covertly approaching attacker.
4. Observe open-ocean transit.
 - a. Monitor operations, or determine group composition or assault or supply support intentions.
5. Observe sortie.

CDM Section 8.
EXAMPLES OF DECEPTIVE NAVAL TACTICS

EXAMPLES OF DECEPTIVE NAVAL TACTICS

The following list of generic and historical naval tactics was developed from interviews with Naval Officers (NOSC TR 1075). The Cognitive Deception Model (CDM) and principles were used as an interview tool. The tactics represent an ad-hoc collection of ideas ranging from the successfully implemented to the hypothetical and are not authoritative. Eight tactics (Numbers 8, 19, 24, 30, 34, 39, 44, 50) were new to the officers who generated them.

TACTIC 1

1.1.1.

If THEY tells subordinates they can go on liberty only after turning in an "all equipment working" report, THEY may receive an untrue report to that effect, motivated by the desire to go on liberty sooner.

TACTIC 2

1.1.1.2.B.

1.6.5.A. and B.

4.4.1.1.1.1.A.a

8.3.2.A. Note 2.c.

8.8.6.2.A

WE wants THEY to enter a particular area. WE establishes a phoney mine field to induce the belief that WE wants THEY to stay out, and make THEY want to enter. WE secretly leaks the fact that the mine field is phoney. THEY seizes the opportunity, and enters the area.

TACTIC 3

1.1.1.2.D.

Weaken THEY's commitment to a weapon and, perhaps, induce him to discard it by inducing the belief that the weapon is ineffective against the intended target or in the anticipated warfare environment. For example, modern ships may lack optical sights, guns, and smokescreen capability because of a possibly erroneous belief that future warfare will be electronic and over-the-horizon.

TACTIC 4

1.1.1.3.

Induce THEY to divide tasks which require interfacing without assigning the responsibility for interfacing to anyone (e.g., in WWII at Leyte Gulf, cruisers and amphibious ships failed to coordinate with battleships for protection of the landing) (self-deception due to oversight when responsibility is shared).

TACTIC 5

1.1.3.B.c
2.4.2.1.4.
2.4.2.2.1.B.b.
2.4.2.2.3.1.1.

Fluster THEY's surface vessel and divert his attention from WE's cruise missile by firing shorter range SAMs in THEY's general direction just prior to the cruise missile's expected detection. THEY will detect the SAMs at long-range due to their higher altitude and mistake them for an effective threat.

TACTIC 6

1.1.4.B.a.

During peacetime maneuvers or small wars, WE (e.g., Orange) employs specific electromagnetic frequencies, inducing THEY (e.g., Blue) to utilize them for defensive preparations such as planning, procuring equipment, and tuning automatic equipment. In a major war, however, Orange suddenly employs a completely different set of frequencies, rendering the first set, and Blue's defense, obsolete.

TACTIC 7

1.1.4.B.a.

Induce THEY to be satisfied with misleading data from an obsolete source by clandestinely shifting communication frequency while keeping the old frequency active with information for THEY's consumption.

TACTIC 8

1.3.1.1.b.aa.
4.4.2.C.b. Simulated Emergency
8.8.A.

Orange (THEY) vessel is trailing Blue (WE) vessel in a peacetime situation. An Orange aircraft is in the area. Blue needs to break trail with Orange vessel. Blue disrupts Orange communications using interference/noise. Blue then intrudes on Orange's circuit as a friend of Orange "to help" and reports Orange aircraft downed or in trouble at specified location, which Orange vessel must rescue immediately.

TACTIC 9

1.3.2.2.F.b.bb.

The North Koreans (THEY) failed to defend Inchon against the successful amphibious landing because they believed such a landing to be impossible in the 4-foot-deep harbor.

TACTIC 10

1.4.1.2.2.1.1.B.
2.4.2.1.2.a.

Make all submarines or aircraft look alike, even though they can carry different weapons, so as to keep THEY uncertain of the capabilities and purpose of any specific ones THEY encounter.

TACTIC 11

1.4.1.2.2.1.1.B.

8.8.6.2.A.

Make THEY believe falsely that WE is not close to a solution to a tactical problem. For example, steer an inconsistent path so THEY's target motion analysis of WE's vessel indicates WE is not ready to launch a missile without lock-on. Also a standard ASW tactic (see No. 24).

TACTIC 12

1.6.b.

6.MSS.5.2.D.c.

For a ship in a class in which only some of the (other) ships have a particular capability, simulate the hardware representing that capability. Depending on the circumstances, this could be done to prevent THEY from attacking, or to draw more fire.

TACTIC 13

1.6.5.B.

6.MSS.5.2.D.c.

8.3.2.A.

Induce belief in THEY that WE's vessel has a submarine escort by periodically communicating with an imaginary one. Alternatively, take a submarine tender along.

TACTIC 14

1.6.7.1.

2.4.2.2.a.bb.

6.MSS.1.2.

8.8.6.1.

In a situation in Vietnam, THEY's planes routinely circled a missile ship just outside missile range. This pattern led to their destruction when, under cover of darkness, the ship switched positions with a ship with longer range missiles.

TACTIC 15

1.6.7.3.2

Induce THEY's (e.g., Blue's) carrier to expect a simultaneous attack from all (e.g., two) points and to send out all interceptors. Wait and attack just after all interceptors must return to refuel.

TACTIC 16

1.8.5.

2.4.2.1.1.B.b.bb.

Capitalize on THEY's unusual procedure of "clearing memory" in heavy traffic once an oncoming ship passes abeam (i.e., deleting the contact from core memory and discarding relevant maneuvering board). In a congested shipping lane, with heavy ship and fishing boat traffic, WE's vessel keeps identity or importance disguised until after passing abeam of THEY's oncoming vessel. Then WE may turn and follow, possibly joining another vessel, or may shoot at him.

TACTIC 17

1.8.5.

2.4.2.1.1.B.a.

4.4.1.1.1

Assume THEY's ship is low on missiles, that THEY is concerned, and that WE's aircraft knows this. Induce THEY to hold fire and preserve weapons for other attacking aircraft by (this is tenuous at best) turning outbound after apparently firing weapons so THEY perceives WE's aircraft as no longer a threat. WE's aircraft may then be allowed to remain in the area to pursue other clandestine goals such as jamming.

TACTIC 18

1.8.5.4

2.4.2.1.4.

2.4.2.2.3.1.1

Induce THEY to forget to follow up on an important message (e.g., "I need a tanker.") by immediately intruding on his communications and introducing a second, seemingly urgent message which requires the operator's attention and action.

TACTIC 19

1.8.8.2.2. "Alternative Explanation"

4.4.2.C.b. (reverse roles) Simulated Emergency

8.8.6.2.A.

Blue (WE) aircraft platform needs to break trail with Orange (THEY) vessel briefly for a covert operation. It is a peacetime situation, with Orange expected to be generally cooperative in an emergency. Blue first communicates with Orange vessel to establish a hospitable attitude. Blue sends aircraft to area of desired Orange vessel course. Aircraft slows down and reports it is in trouble. Blue formally requests Orange vessel to proceed to anticipated ditching area. If Orange complies, Blue conducts covert operation, aircraft returns safely, and Blue thanks Orange vessel. If Orange does not comply, Blue makes a high speed run toward the aircraft and, if Orange does not keep up, conducts covert operation.

TACTIC 20

1.8.8.2.2.1.A.

Make THEY believe he is in a mined area and can not move.

TACTIC 21

1.8.8.2.2.1.A.

8.8.6.A.

THEY has a capability WE wants. WE pretends to have that capability already, thereby inducing THEY to relax security so WE can steal it.

TACTIC 22

2.4.2.1.1.A.a.

4.4.1.1.2.2.A.

Hold "routine operational exercises" as an excuse to move ships into an area and have them available for a special operation.

TACTIC 23

2.4.2.1.1.A.a.bb.

6.111.5.2.D.b.aa.

Under cover of darkness, have combatant simulate merchant ship as to behavior, location, course, speed, following distance, and lighting.

TACTIC 24

2.4.2.1.1.A.b. "Be natural"

8.3.B.b. "Just looking".

A Blue (WE) ASW vessel has located and is attacking an Orange (THEY) submarine. Blue wants Orange to maintain its present "hiding" course and speed. Blue vessel, while actually positioning for and executing his attack, maintains active sonar and search maneuvering patterns. Orange, believing he has not been located, behaves according to "search" rather than "attack" context.

TACTIC 25

2.4.2.1.1.A.b.aa.

Maintain a policy of sending forces of any arbitrary composition at random into any area, so WE can send in the required forces when necessary without it appearing significant and revealing WE's intentions.

TACTIC 26

2.4.2.1.1.A.b.aa.

Make threatening moves routinely so THEY will eventually cease to prepare every time for an actual attack. Examples include routinely testing missiles which could be diverted during the test to actually strike THEY, and repeatedly illuminating potential targets with fire control radar.

TACTIC 27

2.4.2.1.1.A.b.aa.

4.3

When THEY is operating in an area known to be subject to inconsistent sensor performance, induce the belief that THEY can not then predict sensor performance accurately by introducing false background signals which resemble both inconsistent sensor performance symptoms and WE's desired covert event. For example, if the area is subject to spurious radar video, teach THEY to ignore signals which look like a reconnaissance aircraft; if the area is subject to sonar returns from whales that resemble returns from submarines, introduce additional background signals which resemble both.

TACTIC 28

2.4.2.1.1.A.b.aa.

4.4.2.3.2.C.

Have WE's aircraft routinely fly near THEY's ships (and, if practical, illuminate them with fire control radar) to accustom THEY to their presence and enable WE to achieve a surprise attack.

TACTIC 29

2.4.2.1.1.B.a.

6.MSS.5.2.D.c.aa.

Induce THEY to conclude he has found all or part of WE's ship, in a location where it is not, by providing false indicators. Use decoys, release wreckage,

or modify another vessel's hull number, structure, or emissions to simulate the original vessel.

TACTIC 30

2.4.2.1.1.B.b.

8.8.6.1

Blue (WE) vessel is under Orange (THEY) surveillance by means of sensors known to Blue. Blue needs to break trail. Blue's long term advanced preparation has been to develop, deploy, and use signal enhancers (e.g., radar corner reflectors) to present a strong signal for Orange to track and, thereby, to reduce Orange's priority for optimally adjusting or upgrading sensors. When BLUE needs to break trail, he establishes, or takes advantages of, a difficult surveillance environment, and deactivates and/or diverges from the enhancers.

TACTIC 31

2.4.2.1.1.D.c.

If THEY is looking for hard, fast objects, attack with an apparently non-threatening soft, slow-moving platform such as a balloon.

TACTIC 32

2.4.2.1.2.a.

6.MSS.1.2.1.F.

Use electronic "blip enhancers" to strengthen the radar image of a small ship to make THEY believe it is a larger one and/or to make all WE's ships look like the high-value unit.

TACTIC 33

2.4.2.1.2.b.aa.

6.MSS.5.2.D.a.

After breaking trail and "disappearing" from THEY's view, WE's combatant simulates a different ship by changing hull number, etc. It then radiates appropriate emissions which induce THEY to quickly evaluate it as something other than the specific ship being pursued.

TACTIC 34

2.4.2.1.2.b.aa. "Easy data".

Blue (WE) plans to test or demonstrate a new weapon, and does not want Orange to observe it. Blue simulates firing the weapon using a different weapon modified to look like it, and leaves the operating area. Orange (THEY) leaves (hopefully), believing they have obtained the data they sought. Blue then tests the new weapon.

TACTIC 35

2.4.2.2.2.a.

8.8.6.1.

Induce the belief in THEY that WE's ship is partially disabled when, in fact, it is fully capable, or vice versa. For example, switch ships in port (using disguise, cover of darkness, etc.) so a disabled one stays in port for repairs while a fully capable one "limps off".

TACTIC 36

2.4.2.2.3.1.1

Threaten a 2-front action (e.g., Nicaragua, July 1983).

TACTIC 37

2.4.2.2.3.1.1.c.

Induce fear into and fluster THEY by making a serious, but false threat. For example, radiate THEY with detectable missile homing devices (Note: This would probably cause an official protest in peacetime).

TACTIC 38

2.4.2.2.3.1.1.d.

Cause THEY to become perplexed by making apparently significant ship movements for unexplained reasons.

TACTIC 39

2.4.2.2.3.2.a. "Can't see the forest for the trees"--tunnel vision.

An Orange (THEY) surface vessel is responsible for trailing Blue (WE) carrier. A Blue submarine plans to attack the Orange vessel. Blue carrier uses any tactic to break trail of Orange vessel. Orange vessel may then initiate a high priority search for the carrier, the details of which may temporarily obscure his awareness of the "big picture" and afford the Blue submarine an opportunity to attack.

TACTIC 40

4.4.1.1.2.1.A.

Induce THEY to assume that only two of WE's ships are involved in an exercise by sending them out together; and having others, sent out at other times, covertly rendezvous with them.

TACTIC 41

4.4.1.1.2.2.A.

Use a big action or exercise as a cover for getting several ships to another mission.

TACTIC 42

4.4.1.3.2.2.4.C.

Induce THEY to recall his threat and start over in the middle of a committed action by indicating that THEY's goal is obsolete or has already been accomplished.

TACTIC 43

4.4.2.A.

6.MSS.5.2.D.

In WWII, WE induced THEY to expend an exorbitant amount of resources and time sinking "phoney" ships filled with flotation material such as balsa wood. Pursuing destruction of one of these simulated high-value targets could thus lead THEY to place his own vessel in jeopardy of attack by WE's alerted forces.

TACTIC 44

4.4.2.3.2.D. "Cry wolf"--increase attack false-alarm rate.

Orange (WE) surface forces plan preemptive strike on Blue (THEY) carrier battle group. Prior to the actual strike, Orange illuminates Blue repeatedly with fire control radar. Blue begins to ignore alarms which

slows his response to the actual attack. Note: This tactic would probably result in an official protest.

TACTIC 45

O.B.

6.MSS.1.2.2.b.

Introduce false targets (e.g., false radar targets).

TACTIC 46

6.MSS.1.2.1.F.

Create the illusion that the distance of a target, as deduced by signal strength, is different from what it actually is by changing the output level of WE's affectors (data links, communications, radar, etc.).

TACTIC 47

6.MSS.5.2.D.b.

Induce THEY to believe there is no carrier or cruiser in a group by permitting no unique emissions. For example, turn off carrier's radar.

TACTIC 48

6.MSS.5.2.D.c.

Simulate a carrier or cruiser by putting a suitable radar on a small vessel. For example, put a cruiser's radar on a fishing vessel.

TACTIC 49

6.MSS.7.C

8.8.7.B.

Induce THEY to utilize erroneous position information for navigation by changing the location of a navigation aid, such as a lighthouse or a satellite.

TACTIC 50

6.201.1.2.2.b.

If, and only if, it is known that THEY's/cruise missile will avoid less coherent targets such as chaff in the process of seeking out a target which presents a more coherent radar return, it might be possible to hide behind a nontarget stimulus such as a chaff cloud.

TACTIC 51

7.AA.5.

Capitalize on or induce THEY to begin a routine THEY can not quickly stop which blocks his response to WE's threat. For example, during the WWII Battle of Midway, Japanese carriers were attacked while launching bombers. Since they could not simultaneously launch fighters, their defense was seriously compromised.

TACTIC 52

7.AA.5.

8.8.6.A.

Capitalize on THEY's expectation that WE will follow a routine when leaving harbor for a choke point. Leave the evening before under cover of darkness and be through the choke point before THEY expects WE to arrive.

TACTIC 53

8.1.9.3.SO.e.bb.

8.3.2.A. Note 2a.

Intrude on THEY's communication circuits to introduce misleading information.

TACTIC 54

8.1.9.4.

8.3.A.c.

8.8.5.1.

Make THEY awe at WE's ship survivability, doubt his own weapon effectiveness, and feel emotion and embarrassment by making THEY believe he has sunk the same ship many times by resurrecting or simulating the same ship. In WWII, the Yorktown had many enemy assets unnecessarily diverted to it to sink it the second time. Also, WWII submarines induced the belief that the same one had been sunk many times by switching hull numbers, using false message traffic, and releasing identifying garbage.

TACTIC 55

8.1.9.4.

8.8.5.2.A.

Make THEY believe his intelligence was wrong by simulating, in a big show, the onloading of nuclear weapons already aboard, or the offloading of nonexistent ones.

TACTIC 56

8.1.9.4.IO.a.

Make THEY distrust his valid communication circuits by inducing the false belief that WE has intruded and introduced false information.

TACTIC 57

8.3.A.c.

8.8.6.1.

Induce belief in THEY that an aircraft is capable of traveling at a particular high or low speed as follows: a. WE has a particular aircraft, such as a jamming aircraft, available all along; b. WE emits indicators (e.g., communications or another aircraft taking off) of the aircraft's departure time from a distant airbase; c. WE displays the aircraft and its unique capability at the time WE wants THEY to believe it arrived to support the hypothetical high or low speed.

TACTIC 58

8.8.6.2.1.A.b.

Induce belief in THEY that WE does not have certain information (which WE does have) by trying to obtain that information in a way that THEY can observe (e.g., interrogate a satellite).

EVADE Sample Run

EVAD E

A simulation of cognitive processes, demonstrating an approach to studying principles and mechanisms of deception.

Program Design:

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Programming support:

P.M. Milroy and J.H. Hay, SDSU Foundation U. S. Government software;
not subject to copyright.

Enter player level 1-5 >_ Approved for public release;
1 novice ... 5 expert distribution unlimited.

PURPOSES:

1. To emphasize that cognitive simulations can help one understand human deception and counterdeception.
2. To illustrate an approach to studying deception and to motivate development and use of deception theory.
 - A player can plan tactics to deceive his simulated human opponent by using innovation and the general deception principles of CDM Section 4 of NOSC TR 1076.
 - A programmer can enhance the simulated opponent to counter new deceptive tactics.
3. To provide a specific example of how cognitive models can be implemented.
 - The simulation demonstrates partial computer implementation of the cognitive structure of CDM Section 2 of NOSC TR 1076 as a working model.
 - A player can observe the cognitive processes of his simulated opponent in a game format.

Press any key to proceed >

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Table 1

Year	Country	Population (millions)	GDP per capita (USD)	Life expectancy at birth (years)	Infant mortality rate (per 1,000 live births)	HIV prevalence (%)	Tuberculosis incidence (per 100,000 people)	Malaria incidence (per 100,000 people)	Dysentery incidence (per 100,000 people)
1980	India	760	100	58	150	0.1	100	100	100
1985	China	1050	150	68	100	0.1	100	100	100
1990	Brazil	150	2000	72	50	0.1	100	100	100
1995	Russia	145	1000	73	40	0.1	100	100	100
2000	USA	280	35000	77	10	0.1	100	100	100
2005	France	63	30000	80	5	0.1	100	100	100
2010	Germany	82	35000	81	4	0.1	100	100	100
2015	Japan	125	38000	84	3	0.1	100	100	100
2020	South Korea	51	32000	83	2	0.1	100	100	100
2025	Australia	25	40000	84	2	0.1	100	100	100
2030	Canada	38	42000	84	2	0.1	100	100	100
2035	Norway	5	45000	84	2	0.1	100	100	100
2040	Saudi Arabia	35	48000	84	2	0.1	100	100	100
2045	Qatar	2	50000	84	2	0.1	100	100	100
2050	UAE	10	55000	84	2	0.1	100	100	100
2055	Oman	4	58000	84	2	0.1	100	100	100
2060	Bahrain	1	60000	84	2	0.1	100	100	100
2065	Kuwait	3	62000	84	2	0.1	100	100	100
2070	Yemen	30	1000	55	150	0.1	100	100	100
2075	Egypt	100	2000	72	50	0.1	100	100	100
2080	Iran	80	1500	75	30	0.1	100	100	100
2085	Pakistan	230	1000	65	100	0.1	100	100	100
2090	Indonesia	270	1500	72	50	0.1	100	100	100
2095	Philippines	110	2000	72	50	0.1	100	100	100
2100	Vietnam	95	2500	75	30	0.1	100	100	100

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REAL WORLD: Physical

Main Menu

LTM WORLD IMAGE

```

..... 1 Clear REAL WORLD grid
.....
..... 2 Position BLUE ships
.....
..... 3 Use sample BLUE formation
.....
.....
..... 4 Begin ORANGE search
.....
..... 5 Explain ORANGE search
.....
.....
..... 6 Exit to DOS
.....
.....
..... Make selection 1-6:
..... (novice select (3)) >
.....
.....
.....
..... ORANGE search speed:
.....   ↑ increase
.....   ↓ decrease
.....
..... To halt search press
.....   <SPACE BAR>.
.....

```

REAL WORLD: Physical

1. Press arrows to move cursor, to desired position.
2. Use UPPER CASE letters only.
3. Type in BLUE's ships, horizontally or vertically but not diagonally:
 - 1 CVCV
 - 2 DDG
 - 2 FF, or disguise as CV.
4. Use key to delete.
5. When done press <RETURN>.

LTM WORLD IMAGE

Menu Selection 2: Position BLUE Ships.

ORANGE COGNITIVE PROCESSES:

1. When ORANGE scans a 5X5 section of the REAL WORLD, a 5X5 image is transferred perfectly to ORANGES's sensory buffer.
2. Next, features in the sensory buffer are transferred to STM. But many are lost because ORANGES's processing resources can transfer an average of only 9 of the 25 points before the information decays and is lost from the sensory buffer.
3. ORANGE then does a focused search around each significant feature in STM. During this search a template matching process perceives forms containing the significant feature. It may also put additional features discovered in STM.

Press any key to proceed >

continued...

4. ORANGE's processing system examines the most recent (top) item in STM first. As it puts new items in STM, the oldest (bottom) items will be lost if STM is full.
5. During form perception the features in STM that are part of a form are replaced by a single chunk (ship name) that represents the form. A rehearsal process helps keep STM current.

Press any key to proceed >

Menu Selection 5: Explain ORANGE Search

REAL WORLD: Physical

Main Menu

LTM WORLD IMAGE

.....	1 Clear REAL WORLD grid	.....
.....	
.....	2 Position BLUE ships	.....
.....	3 Use sample BLUE formation	.....
.....	
.....	4 Begin ORANGE search	.....
.....	5 Explain ORANGE search	.....
.....DDG.....CV.....		.....
.....	6 Exit to DOS	.....
.....C.....		.....
.....CV.....	Make selection 1-6:>	.....
.....VC.....		.....
.....V.....		.....
.....	
.....DDG.....	ORANGE search speed:	.....
.....	increase	.....
.....	decrease	.....
.....	
.....	To halt search press	.....
.....	<SPACE BAR>.	.....

Menu Selection 3: Use Sample BLUE Formation.

REAL WORLD: Physical	O R A N G E	LTM WORLD IMAGE
.....	CURRENT STATUS AND BELIEF	.....
.....	Readiness: Cond 3, steaming	.....
.....	Status: SEARCHING	.....
.....	Alerts:	.....
.....	ACTIVE COGNITIVE PROCESSES	.....
.....	Hi Level:	.....
....DDG....CV.....	Input: PERCEIVING FEATURE	.....
.....	Output:	.....
.....C.....	Resources: 30%	.....
.....CV.....	Channels:	.....
.....VC.....		.....
.....V.....		.....
.....DDG.....	SENSORY BUFFER	STM
.....	.....	C
.....
.....	..CV.	.
.....
.....

SCORES TIME: 3 RESOURCES: 22 (AVG 30 %)

Menu Selection 4: Begin ORANGE Search.

REAL WORLD: Physical	O R A N G E	LTM WORLD IMAGE
.....	CURRENT STATUS AND BELIEF	.....
.....	Readiness: Cond 2, ON ALERT	.....
.....	Status: "HIGH INTEREST"	.....
.....	Alerts:	.....
.....	ACTIVE COGNITIVE PROCESSES	.....
.....	Hi Level:	.....
....DDG....CV.....	Input: PERCEIVING FORM	.....CV.....
.....	Output:	.....
.....C.....	Resources: 50%	.....
.....CV.....	Channels:	.....
.....VC.....		.....
.....V.....		.....
.....DDG.....	SENSORY BUFFER	STM
.....	.....	CV
.....
.....
.....
.....

SCORES TIME: 4 RESOURCES: 22 (AVG 30 %)

REAL WORLD: Physical	O R A N G E	LTM WORLD IMAGE
.....	CURRENT STATUS AND BELIEF	.....
.....	Readiness: Cond 1, GEN QTRS	.....
.....	Status: CV TARGETED	.....
.....	Alerts:	.....
.....	ACTIVE COGNITIVE PROCESSES	.....
.....	Hi Level: CALCULATING	.....
DDG.....CV.....	Input:	DDG.....CV.....
.....	Output:	.....
.....C.....	Resources: 100%	.....C.....
.....CV.....	Channels:	.....CV.....
.....VC.....		.....VC.....
.....V.....		.....V.....
.....	SENSORY BUFFER	.....
DDG.....	.....	DDG.....
.....	STM	.....
.....	CVCV	.....
.....	DDG	.....
.....	CV	.....
.....
.....

SCORES TIME: 57 RESOURCES: 710 (AVG 40 %)

REAL WORLD: Physical	O R A N G E	LTM WORLD IMAGE
.....	CURRENT STATUS AND BELIEF	.....
.....	Readiness: Cond 1, GEN QTRS	.....
.....	Status: CV ENGAGED	.....
.....	Alerts:	.....
.....	ACTIVE COGNITIVE PROCESSES	.....
.....	Hi Level:	.....
DDG.....CV.....	Input:	DDG.....CV.....
.....	Output: DIRECT ENGAGE	.....
.....C.....	Resources: 100%	.....C.....
.....CV.....	Channels:	.....CV.....
.....VC.....		.....VC.....
.....V.....		.....V.....
.....	SENSORY BUFFER	.....
DDG.....	.....	DDG.....
.....	STM	.....
.....	CVCV	.....
.....	DDG	.....
.....	CV	.....
.....
.....

SCORES TIME: 59 RESOURCES: 710 (AVG 40 %)

REAL WORLD: Physical	O R A N G E	LTM WORLD IMAGE
.....	CURRENT STATUS AND BELIEF	.....
.....	Readiness: Cond 1, GEN QTRS	.....
.....	Status: CV ENGAGED	.....
.....	Alerts:	.....
.....	ACTIVE COGNITIVE PROCESSES	.....
.....	Hi Level:	.....
DDG.....CV.....	Input:	DDG.....CV.....
.....	Output: IMPLEMENT FORM	.....
.....C.....	Resources: 100%	.....C.....
.....CV.....	Channels:	.....CV.....
.....VC.....		.....VC.....
.....V.....		.....V.....
.....DDG.....	SENSORY BUFFER	.....DDG.....
.....	STM	.....
.....	CVCV	.....
.....	DDG	.....
.....	CV	.....
.....
.....

SCORES TIME: 64 RESOURCES: 710 (AVG 40 %)

REAL WORLD: Physical	O R A N G E	LTM WORLD IMAGE
.....	CURRENT STATUS AND BELIEF	.....
.....	Readiness: Cond 1, GEN QTRS	.....
.....	Status: CV ENGAGED	.....
.....	Alerts:	.....
.....	ACTIVE COGNITIVE PROCESSES	.....
.....	Hi Level:	.....
DDG.....CV.....	Input:	DDG.....CV.....
.....	Output: DRIVE AFFECTORS	.....
.....C.....	Resources: 100%	.....C.....
.....V.....	Channels:	.....CV.....
.....V.....		.....VC.....
.....DDG.....	SENSORY BUFFER	.....V.....
.....	STM	.....DDG.....
.....	CVCV	.....
.....	DDG	.....
.....	CV	.....
.....
.....

SCORES TIME: 66 RESOURCES: 710 (AVG 40 %)

LTM WORLD IMAGE

Press any key
to proceed >

to proceed >